

CHINKO CONSERVATION AREA REDD+ PROJECT, CENTRAL AFRICAN REPUBLIC



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Project Title	Chinko Conservation Area REDD+ Project, Central African Republic
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Project Location	Central African Republic in the prefectures of Mbomou, Haute-Kotto and Haut-Mbomou and Vakaga.
Project Proponent(s)	African Parks Contact: +27 11 465 0050; info@africanparks.org
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Project Lifetime	15 September 2016 – 14 April 2045
GHG Accounting Period	15 September 2016 – 14 April 2045
History of CCB Status	Not applicable, applying for a joined VCS – CCB validation and verification
	The project aims to qualify for Gold Level criteria in the Biodiversity and Climate, a brief description of the activities planned and expected results are provided below. Benefits on Biodiversity. The project will achieve exceptional biodiversity benefits by conserving threatened fauna species including at least four critically endangered, eight endangered, as well as 17 vulnerable species. The project will continuously monitor these species with special focus on <i>Pan troglodytes schweinfurthii</i>, <i>Lycaon pictus</i> and <i>Loxodonta Africana</i>. In addition, preliminary results of the vegetation inventory showed the presence of certain typical rain forest like the critically endangered Mukulungu (<i>Autranella congolensis</i>) the endangered Wenge tree (<i>Millettia laurentii</i>) and true African ebony (<i>Diospyros crassiflora</i>). These species are heavily exploited all over their range and Chinko is a valuable stronghold for major individuals and might be crucial for the long-term preservation of a diverse gene pool for this economically important tree species.
Gold Level Criteria	Project activities will contribute to the conservation of these species through the protection of their natural habitats, an improvement in connectivity between the area and its surroundings and a reduction in human pressure on the biodiversity in the CCA. Project activities include the development of infrastructure to ensure optimal management of the CCA, training and equipping of a sufficient number of rangers, effective law enforcement activities and sensitization activities with local communities to ensure the benefits of healthy eco-systems are well understood. Benefits on Climate. In the CAR the vulnerability to changes in the climate and a lack of ability to adapt to their adverse impacts represent serious threats to the management of ecosystems and other agricultural and renewable natural resources, social cohesion, stability and sustainable development. The implementation of the REDD project will create positive net climate change impacts. The sequestration of carbon in living biomass and the avoided deforestation of natural covers which act as sinks of CO₂ will contribute to the reduction of GHG emissions in the project zone. The measures to assist communities and biodiversity to adapt to the probable

Expected Schedule	impacts of climate change are designed to avoid the loss of forest cover by fighting the main drivers of deforestation. The main activities in relation to this are sensitise pastoralists to promote sustainable use of natural resources in line with the land-use plan and establish transhumant pastoralism corridors (TPCs). In addition, establish a good relationship with the sedentary communities to enhance local skills training, welfare development, self-sustaining business development., sensitise communities to promote the sustainable use of natural resources in line with the land-use plan and identify key income-generating opportunities. These goals are being addressed through sustainable land use planning The Land Use Plan, which includes all required wildlife corridors and exclusion zones, is agreed upon and communicated to communities. CCA purpose for a plan and strategy for Greater Chinko is contributing to regional stability and ensuring long term habitat for wildlife and sustainable use for the communities as a result. Further development of the Land Use Plan will create the proper conditions for stability in the region are achieved will conserving and protecting wildlife with community involvement.
	Verification 15 September 2016 – 31 December 2020

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1 SUMMARY OF PROJECT BENEFITS

1.1 Unique Project Benefits

Outcome or Impact Estimated by the End of Project Lifetime	Section Reference
Improve local communities' livelihoods through access to sustainable resources such as meat, fish, fruits, honey and medicinal plants, increasing well-being of the habitat that supports the ecosystem services they need. These include permanent access to high-quality freshwater even during the peak of dry season, protection of land from erosion and reduction of air pollution amongst others.	2.1.11 and 4
Increased natural capital through the restoration of resilient and productive ecosystems. The project aims to restore species rich and productive woodland and grassland savannas, tropical forests and productive freshwater systems. This will result in higher wildlife densities, expansion of species distribution and reintroduction of lost species.	2.1.11 and 5
Improved understanding of the benefits of wildlife and habitat conservation and the creation of a local constituency for conservation amongst local communities.	2.1.11 and 4
Reduced conflict through evidence based practical solutions for existing difficulties between different communities and cultures. The project will take a regional approach to organize a comprehensive land-use plan for transhumance, hunting, fishing and other land-uses.	2.1.11 and 4
Improved safety and security for people and wildlife through developing long-term partnerships with local communities and local authorities as well as enforcing the law in a large and inaccessible landscape.	2.1.11

1.2 Standardized Benefit Metrics

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
GHG emission reductions or removals	Net estimated emission removals in the project area, measured against the without-project scenario	Not applicable	
	Net estimated emission reductions in the project area, measured against the without-project scenario	11,916,890 ¹	3.2.4
Forest ² cover	For REDD ³ projects: Estimated number of hectares of reduced forest loss in the project area measured against the without-project scenario	Data not available: the baseline emissions models predict cumulative emissions over time rather than a rate of ecosystem conversion in hectares per year.	
	For ARR ⁴ projects: Estimated number of hectares of forest cover increased in the project area measured against the without-project scenario	Not applicable	
Improved land management	Number of hectares of existing production forest land in which IFM ⁵ practices are expected to occur as a result of project activities, measured against the without-project scenario	Not applicable	
	Number of hectares of non-forest land in which improved land management practices are expected to occur as a result of project activities, measured against the without-project scenario	Not applicable	

¹ Emissions reductions for the first 10-year baseline period.

² Land with woody vegetation that meets an internationally accepted definition (e.g., UNFCCC, FAO or IPCC) of what constitutes a forest, which includes threshold parameters, such as minimum forest area, tree height and level of crown cover, and may include mature, secondary, degraded and wetland forests (*VCS Program Definitions*)

³ Reduced emissions from deforestation and forest degradation (REDD) - Activities that reduce GHG emissions by slowing or stopping conversion of forests to non-forest land and/or reduce the degradation of forest land where forest biomass is lost (*VCS Program Definitions*)

⁴ Afforestation, reforestation and revegetation (ARR) - Activities that increase carbon stocks in woody biomass (and in some cases soils) by establishing, increasing and/or restoring vegetative cover through the planting, sowing and/or human-assisted natural regeneration of woody vegetation (*VCS Program Definitions*)

⁵ Improved forest management (IFM) - Activities that change forest management practices and increase carbon stock on forest lands managed for wood products such as saw timber, pulpwood and fuelwood (*VCS Program Definitions*)

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
Training	Total number of community members who are expected to have improved skills and/or knowledge resulting from training provided as part of project activities	Approximately 400 employees and frequent exchanges with about 35 different communities and roughly 2'000 individuals.	4
	Number of female community members who are expected to have improved skills and/or knowledge resulting from training as part of project activities	Approximately 500 given the heavily male biased nature of certain activities such as hunting, mining, and pastoralism.	4
Employment	Total number of people expected to be employed in project activities, ⁶ expressed as number of full-time employees ⁷	Approximately 400 employees with 60 non-armed eco-monitors, 60 non-armed tango officers and about 30 rangers.	4
	Number of women expected to be employed as a result of project activities, expressed as number of full-time employees	More than 10 given the nature of the work and the difficult circumstances. Efforts are spent to increase the number of women employed.	4
Livelihoods	Total number of people expected to have improved livelihoods ⁸ or income generated as a result of project activities	Approximately 250'000 people. All adjacent communities will benefit from the Chinko Conservation Area (CCA). Improved livelihoods are expected in at least three levels. 1) Improved security (fewer armed groups and	2.1.6 and 4.2.1

⁶ Employed in project activities means people directly working on project activities in return for compensation (financial or otherwise), including employees, contracted workers, sub-contracted workers and community members that are paid to carry out project-related work.

⁷ Full time equivalency is calculated as the total number of hours worked (by full-time, part-time, temporary and/or seasonal staff) divided by the average number of hours worked in full-time jobs within the country, region or economic territory (adapted from the UN System of National Accounts (1993) paragraphs 17.14[15.102];[17.28])

⁸ Livelihoods are the capabilities, assets (including material and social resources) and activities required for a means of living (Krantz, Lasse, 2001. *The Sustainable Livelihood Approach to Poverty Reduction*. SIDA). Livelihood benefits may include benefits reported in the Employment metrics of this table.

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
		uncontrolled movements), 2) Preservation of wildlife (mammals, birds, fish, molluscs) that serve as an important source of nutrition for local populations. 3) Diverse ecosystem services such as constant supply of freshwater, protection from erosion, high air quality, amongst others.	
	Number of women expected to have improved livelihoods or income generated as a result of project activities	At least 125'000	2.1.6 and 4.2.1
Health	Total number of people for whom health services are expected to improve as a result of project activities, measured against the without-project scenario	At least 400 (all employees)	4
	Number of women for whom health services are expected to improve as a result of project activities, measured against the without-project scenario	At least 10 (all employees)	4
Education	Total number of people for whom access to, or quality of, education is expected to improve as result of project activities, measured against the without-project scenario	African Parks is not an expert in education. However, sensitisation programs for all local employees (400) and community members in 35 villages (2,000 people) benefit from many educational programmes and courses in ecology, conservation, economics and other subjects. African Parks also works closely with students at the University of Bangui and the technical school of Mbaiki.	4.2.1
	Number of women and girls for whom access to, or quality of, education is expected to improve as	At least 10 all employees and approximately 500 community members.	4.2.1

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
	result of project activities, measured against the without-project scenario		
Water	Total number of people who are expected to experience increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	Approximately 250'000. All adjacent communities benefit from ecosystem services provided by the CCA. A constant supply of freshwater (even during the dry season) is supplied by major rivers like Mbari, Chinko and Mbomou which are morphologically and ecologically in a pristine stage.	4.1.3
	Number of women who are expected to experience increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	Approximately 125,000. See above for more information.	4.1.3
Well-being	Total number of community members whose well-being ⁹ is expected to improve as a result of project activities	More than 35 local communities will benefit and about 2'000 individuals. Most benefits will come from education and training in sustainable use of natural resources and the responsible exploitation of minerals.	4.2.1
	Number of women whose well-being is expected to improve as a result of project activities	About 500 given the heavily male biased nature of certain activities.	4.2.1

⁹ Well-being is people's experience of the quality of their lives. Well-being benefits may include benefits reported in other metrics of this table (e.g. Training, Employment, Livelihoods, Health, Education and Water), and may also include other benefits such as strengthened legal rights to resources, increased food security, conservation of access to areas of cultural significance, etc.

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
Biodiversity conservation	Expected change in the number of hectares managed significantly better by the project for biodiversity conservation, ¹⁰ measured against the without-project scenario	In 2014, African Parks began to manage an area of about 20'000 km². After the signature of the new PPP on April 15th 2020 this increased to about 24'300 km². In 2023, a land-use plan will be proposed to the government of the CAR to actively manage 64'700 km² for nature conservation and sustainable development in a conservation landscape of existing protected areas of total 80'000 km². Sustainable land-use plans will be suggested to local communities for another 20'000 km² in the Eastern CAR Wilderness.	2.1.1 1
	Expected number of globally Critically Endangered or Endangered species ¹¹ benefiting from reduced threats as a result of project activities, ¹² measured against the without-project scenario	At least four Critically Endangered and eight Endangered species (Table 22)	5.2.1

¹⁰ Managed for biodiversity conservation in this context means areas where specific management measures are being implemented as a part of project activities with an objective of enhancing biodiversity conservation, e.g. enhancing the status of endangered species

¹¹ Per IUCN's Red List of Threatened Species

¹² In the absence of direct population or occupancy measures, measurement of reduced threats may be used as evidence of benefit.

2 GENERAL

2.1 Project Goals, Design and Long-Term Viability

2.1.1 Summary Description of the Project (G1.2)

Eastern Central African Republic (CAR) is a unique area where savannah and tropical forest meet, the diversity of habitats, such as humid Congolian lowland forests, Sudanian woodland savannas, dry edaphic grasslands and swampy floodplains, creates a complex ecosystem with an extraordinary diversity of wildlife and sustains an abundance of natural resources. The Chinko conservation area REDD+ project is an initiative held by African Parks to protect this zone. The project is intended as a grouped one, in which the long-term vision is to protect around 10 million hectares (ha) of eastern CAR in the prefectures of Mbomou, Haute-Kotto, Haut-Mbomou and Vakaga.

In 2014, African Parks signed an agreement for the management of the hunting zones around N° 39, 40, 41 and 48 (which covers around 2 million hectares and is the area of the project in the first instance). This agreement was later superseded in April of 2020 by a new 25-year agreement to manage the initial hunting zones as well as N° 17, 32, 34, 35, 36, 38, 49. Hunting zone N° 36 will make up the second instance of the project. The combination of the areas included in the latest management agreement is called the Chinko conservation area (CCA) and makes up around 5.5m ha. See Figure 1 for details of the location. The management agreement provides the possibility of further increasing the size of the protected area and is the reason a grouped project was considered, where new instances could be added in the future.

The conditions prior to the implementation of the project had several factors that impacted the well-being of communities and community groups living on the periphery of the project area. These include insecurity in the region, persistent conflict between transhumant pastoralists and local agricultural communities, lack of education and employment opportunities, and poor healthcare. These factors had an impact on the biodiversity of the region as well, where practices like unsustainable hunting and an economy of illegal wildlife trade, transhumant pastoralism and unsustainable agricultural activities were performed. Other unsustainable practices such as illegal gold mining and logging also impacted the biodiversity in the project area.

The overall objective of the project is to secure the core protected area of eastern CAR and to ensure positive influence over the surrounding areas in order to restore and improve ecosystem functions and habitat for wildlife, through law enforcement and conservation activities. The project will also bring opportunities for community development and for nature conservation and continue to strengthen the African Parks (AP) management team. This will be an effort oriented towards improving the lives and livelihoods of local communities, who have been consulted extensively through a participatory approach and have identified several activities that will have a positive impact on their lives and livelihoods. A comprehensive land use plan will ensure that positive benefits are maximised, guaranteeing that the area is protected in the future and that critical ecosystem services are maintained.

The measures to be implemented by the project are focused on targeting the main agents and drivers of deforestation and conversion, in order to give new opportunities that create change in the agents' behaviour. These activities include: sensitisation of the sedentary communities and transhumance pastoralists, the establishment of more sustainable practices, increase of employment opportunities, continuation of biodiversity monitoring and protection of forest and grassland areas from human intervention among others. The success in the implementation of these activities is expected to generate greenhouse gases (GHG) emissions reductions. Additionally, by preserving the natural ecosystems in Chinko, the

biodiversity in the protected area will be impacted positively due to a reduction in anthropogenic disturbance.

Upon the implementation of the project activities described above, the project is expected to generate an estimated annual average of GHG emissions reduction of 1,177,253 tCO₂e and a total of 11,916,890 tCO₂e for its first 10-year baseline period.

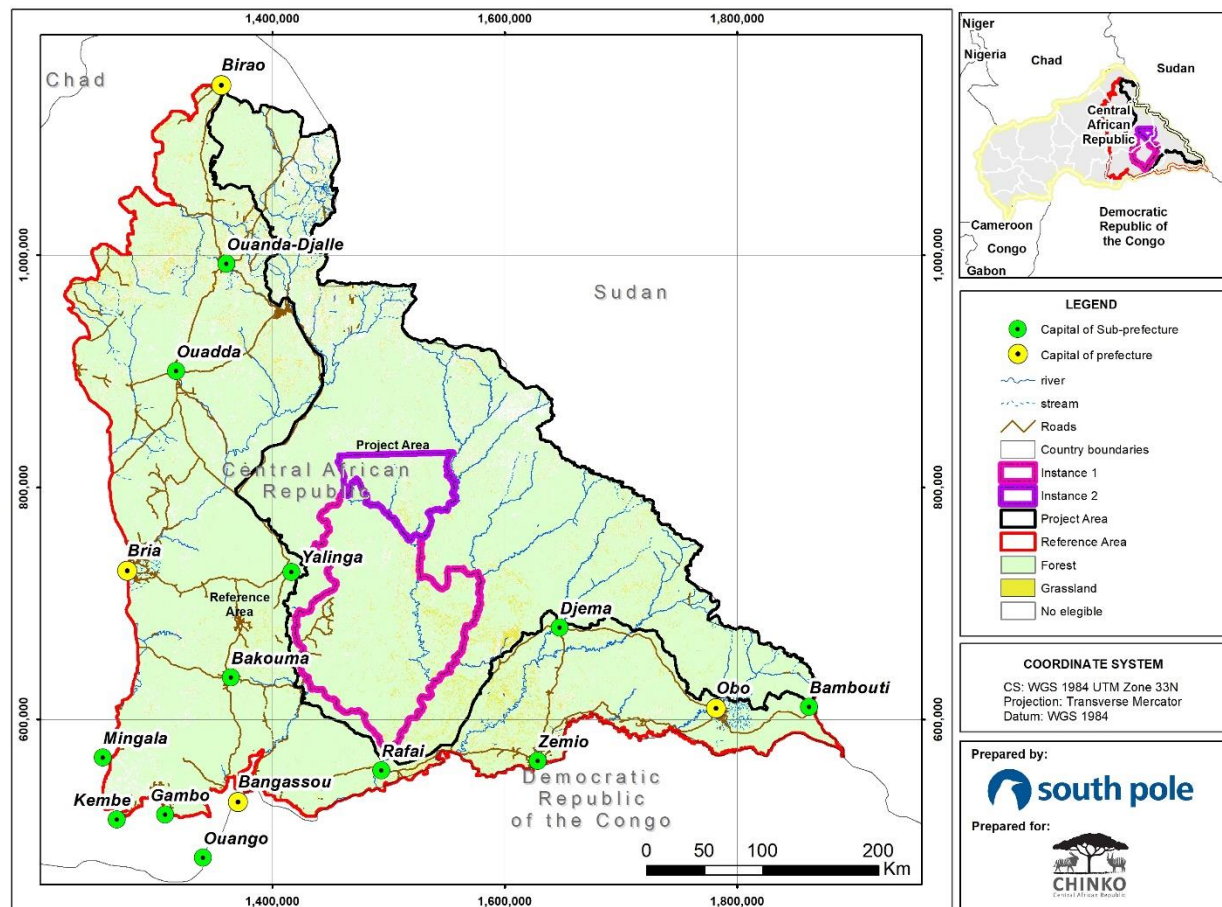


Figure 1: Project location¹³

2.1.2 Project Scale

Project Scale	
Project	
Large project	X

¹³ A full-size map is also available in the supporting documentation

2.1.3 Project Proponent (G1.1)

Organization name	African Parks RCA
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2.1.4 Other Entities Involved in the Project

Organization name	African Parks Network
Role in the project	Overseeing the management of the project
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Organization name	South Pole Carbon Asset Management Ltd.
Role in the project	South Pole plans and oversees the development of appropriate project design and monitoring techniques in line with VCS and CCBS guidelines.
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2.1.5 Physical Parameters (G1.3)

Eastern CAR, where CCA is located, is one of the places on planet Earth where unique conditions of vegetation, habitats and ecological and evolutionary processes developed before the great influence of humans many years ago. This makes it a unique area where natural processes can take place, processes that are unlikely to occur in other regions of the world dominated by humans today. The high productivity of such a natural tropical ecosystem and its resilience allows local people to directly benefit from these natural resources and ecosystem services.

The vast, undisturbed natural vegetation and diversity in an ecotone (tropical forest, forest, grassland) are likely to be a barrier to invasive species and the spread of disease. This is due to diverse habitat conditions and high competition, as well as the substantial effective population size and permanent genetic and phenotypic variation that can be assumed for most of its organisms (Thomas, Robert, Derek, & Michael, 1997).

Size, connectivity, productivity and resilience are key parameters for the desired environmental framework that will ensure long-term nature conservation in eastern CAR. Conditions in which ecological and evolutionary processes can develop without significant human influence must be maintained and preserved for long periods of time. The goal is to establish a self-regulating natural system that can dynamically adapt to changing conditions over time and can maintain a high level of biodiversity and resilient ecosystem functions, regardless of human intervention.

Below is a summary description of the basic physical parameters of the project.

Topography

The following topography conditions can be found in eastern CAR:

Valleys, gorges, rifts

- The tropical dense northern Congolian lowland rain forest (Gbako or Limé) is the natural climax vegetation of soil that is sheltered from dry winds, intensive sun and fires by valleys, gorges or rifts. It can maintain moisture even during peak dry season (February–March) and during exceptional droughts. This is at least the case for areas up to 7.2°N that receive on average a minimum of 1,400 mm/a of precipitation and experience a dry season of maximum six months with less than 100 mm of precipitation on average.
- Tropical freshwater rivers and streams are the natural habitat that occur along major drainage systems. Most larger rivers are permanent at their middle and lower parts but show high seasonality and often completely dry out in their headwaters and upper stretches during the dry season. In general, most small- to medium-sized forest streams dry out completely during peak dry season (February–March) whereas medium and large woodland savanna rivers keep at least some surface water during the entire dry season. Lakes, ponds and other stagnant large waters are extremely rare given the long geological history of erosion and extremely limited tectonic and no glacial activities in the last millions of years.

Flat rocks, thick laterite layers and inselbergs

- Tropical dry edaphic grassland (Lakéré or Pémbéré) is the natural climax vegetation of soil that contains only a thin layer of a few centimetres of small particles. It is otherwise a hard layer of rock or laterite, impenetrable for large root systems and exposed to dry winds, intensive sun radiation and fires.

- Tropical temporary shallow freshwater ponds are common during the rainy season (May–November) on large rock fields where dry edaphic grasslands occur. Most of these ponds dry out completely and are filled up again during the rainy season over many cycles.

Floodplains, depressions, and sources

- Tropical humid edaphic grassland (Lando) is the natural climax vegetation of soil that is flooded or hyper wet with stagnant water during prolonged periods of the year.
- Tropical standing freshwater in temporal and permanent small lakes, ponds or flooded forests occur, thinly distributed, along certain lowland rivers that created the flat plains (mainly Ango, Bitá, Vovodo, Ali, Képi, Ngoangoa and Mbari). The hydrology of these small permanent waters might be extraordinarily complex and highly fragile. Any change in the morphology of the rivers associated, or a large-scale alteration of vegetation, might profoundly affect these hydrologic systems. It is likely that common hippopotamuses play a central role in keeping some of these water systems free from vegetation and slow down or even partly reverse the sedimentation of surface waters.

Rolling hills, plateaux, and lowlands

- Tropical open woodland savanna (Ngonda) is the natural climax vegetation of well-drained, flat or medium steep soils that are exposed to dry winds, intensive sun and fires. In general, climate, edaphology and the topography of eastern CAR are in favour of wooded savanna, which dominates large areas and is the biggest natural habitat in the region. However, species composition of the open woodland savanna, as well as percentage of tree cover and the average height of woody vegetation, differ tremendously between different sites and might be affected by edaphology, nutrients as well as biological process.

Soils

CAR soils are mainly ferralitic on sandstone for most of the territory and become tropical ferruginous towards the north. The ferralitic soils are more fertile than tropical ferruginous soils (FAO & GEF, 2018).

Ferralitic soils cover three quarters of the territory, particularly where high rainfall favours the hydrolysis of rock minerals to a great depth. These soils are poor in nutrients, acid, fragile, highly desaturated, often poorly drained with some inclusions of soils with gravelly or indurated horizons. Some are depleted in clay and appear on sandy materials from quartzite (Mbrés) or sandstones (Mouka-Ouadda, Kembe-Nakando and Carnot). Once they get degraded, ferralitic soils do not recover easily, and sometimes turn into bare crusts hardly recoverable (FAO & GEF, 2018).

Climate

Average total rainfall

Average annual precipitation ranges from 750 mm in the extreme north to >1,700 mm in the extreme south. This range of precipitation allows for a diverse woody vegetation, spreading from dense forests to open woodland savannas and shrublands. Areas receiving more than 1,600 mm are potentially dominated by dense forest, areas receiving 1,600 mm to 1,000 mm are potentially dominated by humid open woodland savanna and areas receiving 1,000 mm to 750 mm are potentially dominated by shrublands.

Distribution of rainfall over the year

The length of the dry season with average monthly precipitation lower than 100 mm and the absolute minimum rainfall in the driest month of the year might set limits to the potential vegetation of the area. In eastern CAR the dry season with at least 17 mm, ranges from three months (December, January and

February) to eight months, with up to five months without any rainfall at all (October to May). This could be the main driver for certain typical dense forest species that do not tolerate extensive dry periods, even if sheltered from surrounding hot and dry climate.

Average temperature

With an average monthly temperature from 24.4°C to 26.4°C, the climate in eastern CAR is typical tropical with no extremes.

Hydrology

The CAR hydrographic network is divided between two main basins. The Chari-Logone basin in the north, represents around one third of the country area and flows into Lake Chad. The Congo basin, the most important one, represents almost two thirds of the country area and flows into the south (Boulvert, 1987).

The Congolese basin is made up of two major sub-basins, the Oubangui and Sangha rivers. The Oubangui basin occupies more than three-quarters of the Congo basin. It stretches from east to west, as far as the Democratic Republic of the Congo (DRC), with the Uélé being the main contributor. The Oubangui is formed by the meeting of the Uélé and the Mbomou downstream from the city of Ouango. The Mbomou river originates from the Congo-Nile interfluve in the extreme southeast of the country, on the borders with Sudan and DRC, not far from Mount Navandou. Its main tributaries are the Ouara, the Chinko and the Mbari (Ministère de l'Environnement et du Développement Durable, 2013).

The project area is bordered along most of its east and west area by the Chinko and Mbari rivers.

Vegetation types

The CAR is located in an ecological transition zone. In the southernmost part, the closed canopy forest, mostly dense and humid, covers about 15 percent of Central African territory (Billand, 2009), this forest corresponds to the northern part of the closed forest in the Congo basin. The extreme north of the CAR is made up of steppes and shrubby or grassy savannahs, while the central part of the country is made up of open forests and mosaics.

The vegetation types in the project area are classified in four major strata:

- Closed canopy forest: found mostly in the southern part, covering almost 30% of the project area (around 3.3 m ha).
- Open woodland savannah: found in the central and northern part, covering almost 60% of the project area (around 6.1 m ha).
- Wet edaphic grassland: found mostly in the northern part and around the water streams, covers around 3% of the project area (around 0.35 m ha).
- Dry edaphic grassland: found mostly in the northern part, covers around 6% of the project area (around 0.63 m ha).

Figure 2 presents the vegetation types described above.¹⁴

¹⁴ Full-size map available in the supporting documentation

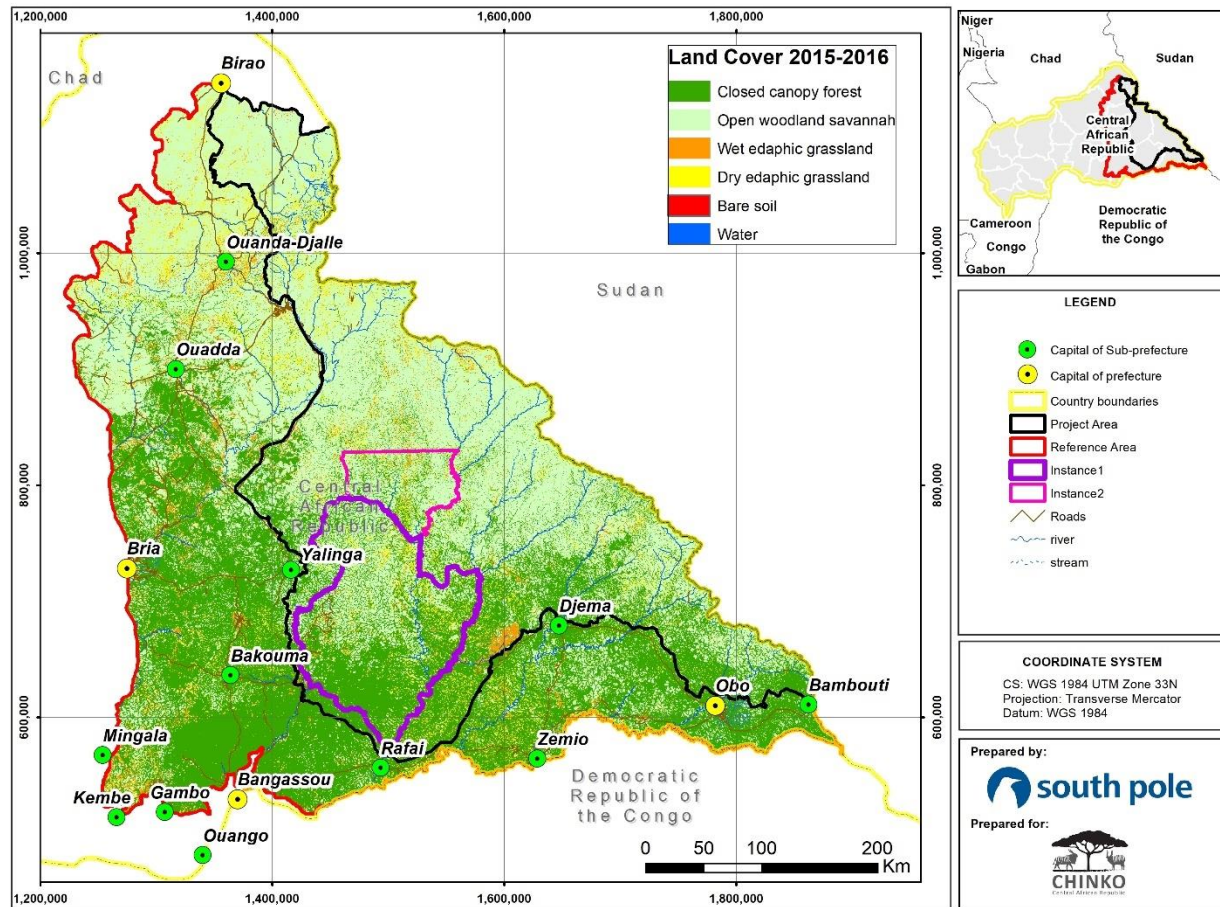


Figure 2: Vegetation cover

2.1.6 Social Parameters (G1.3)

The CCA is located in the Mbomou prefecture, in the southeastern part of the CAR, close to the 'African Pole of Inaccessibility', where the borders of CAR, DRC and South Sudan meet. The area falls mainly within three local administrative areas within the Mbomou prefecture. These three sub-prefectures are Bakouma, Bangassou and Rafai. The first project instance consists of four former hunting zones, Bas Chinko, Chinko, Mbari and Vovodo Chinko, which were created in 1972. The second instance will be made up of the former hunting zone, Trois Rivières.

Main settlements

At present the CCA is uninhabited and only has limited road access and minor infrastructure development. The headquarters of the project are located 256 km from Bakouma (the nearest local authority with a population of between 800 and 1,200 inhabitants) and 370 km from Bangassou, the regional capital.

The core zone of the project is located more than 600 km from the capital city of Bangui. Sometimes the route from Bangui could take several weeks to drive through because of the bad state of the roads. The route is also completely cut off during the six-month-long rainy season from May to October. It should also

be noted that the route is often subject to disruption by armed groups making it necessary to have armed escorts for parts of the route.

The following villages are located around the periphery of the project area: Nzako-Bac (Yakossi), Oua (Lavougba), Fodé, Kitika, Ouanda, Denguero, Agoumar, Sélimé, Madabazouma, Banga, Yongofondo, Bangassou, Ouango, Yongossaba, Vougba, Balifondo, Rafai, Mogba, Meskiné, Katembour, Guérékindo, Dembia, Baroua, Derbissaka, Djéma, Lengo, Bakouma, Nzako, Yalinga, Bria, Bani, Bangana, Sam-Oundjia, Ouanda-Djallé, Ouadda, Birao, AmDafok, Karamadar, Banima and Daradou.

The exact population of the region is unknown but average human population densities for tropical woodlands is amongst the lowest in the world.¹⁵ It is estimated that the prefecture of Mbomou has a population of approximately 150,000 to 200,000 people, mostly living in cities. The population of Haut-Mbomou is approximately 50'000 to 80'000 and that of Haut-Kotto between 100'000 to 150'000. The population Vakaga is also somewhere between 50'000 to 80'000 people. These estimations are supported by the experiences of the African Parks teams that are familiar with the landscape.

Population growth is extremely high in the region, mainly driven by low education, lack of birth control and family planning, non-functional family structures and high levels of infectious disease. There are also several hundred thousand nomadic herders and accompanying merchants that use the wider landscape temporarily with a strong tendency to settle down and occupy the region in long-term if not carefully managed.

Socio-cultural information

Although CCA is considered uninhabited and has limited accessibility, there are community groups and other actors living in the surrounding landscape. These groups include various armed groups, transhumant pastoralists as well as sedentary communities living on the periphery of the protected area.

The armed groups that have been identified as operating in the larger geographic landscape surrounding the project area are as follows: the Lord's Resistance Army (Uganda), the Janjaweed (Sudan and South Sudan), the Sudan People's Liberation Movement (SPLM) & SPLM-in-Opposition (SPLM-IO), Sudan People's Liberation Army (SPLA) and SPLA-in-Opposition (SPLA-IO), the Séléka and ex-Séléka and the anti-balaka (CAR) (Ondoua Ondoua, G., Beodo Moundjim, E., Mambo Marindo, J.C., Jiagho, R., Usongo, L. & Williamson, 2017).

The transhumant pastoralist communities living in the landscape are the Fulani, the ethnic group with the largest nomadic pastoral community in the world. All Fulani are classed as marginalised, minority peoples by the Office of the United Nations High Commissioner for Refugees (UNHCR) and the United Nations Development Programme.¹⁶

The Mbororo peoples are nomadic communities of Fulani cattle herders. They do not live in fixed abodes or practice agriculture but spend most of the time travelling in search of new pasture for their cattle. Most Mbororo now living in the CAR arrived in the 1920s from Cameroon and Nigeria, some via Chad. The Mbororo in the CAR are sub-grouped into the following lineages: Aku, Jafun and Wodaabe (Ondoua Ondoua, G. et al, 2017). The Mbororo have been persecuted during several periods of civil conflict in CAR, culminating in the ongoing ethnic cleansing by anti-balaka rebels.

¹⁵ Personal communications with African Parks, 2021.

¹⁶ UNDP 2014, available at: <https://www.undp.org/content/undp/en/home/librarypage/hdr/2014-human-development-report.html>

The sedentary agriculturalists in the region are Bantu peoples. The Bantu people living in the vicinity of Chinko are Banda (subgroups Langba, Langbassi, Yakpa), Mbangui, Ngbugu (Ngbougou), Nzakara, Sango and Yakoma (Ondoua Ondoua, G. et al, 2017).

The region surrounding the project area is characterised by the presence of large numbers of transhumant pastoralists with the total population being close to 50% Bantu and 50% Fulani. Around Chinko, Bantu farmers and Fulani pastoralists live in the same towns and villages.

Land-use and economic activities

The project has established three zones with different management regimes in the region. They are currently working towards the expansion core protected area. There is also a buffer zone, where activities are limited and managed, in order to protect the core protected area and a transition zone surrounding the buffer, which will be developed for tourism.

Poverty is prevalent in the region and there are few economic opportunities for the communities living in the area. As a result, local settled communities are greatly dependent on natural resources. These isolated communities make their living through small-scale agriculture, livestock rearing, hunting (both legal and illegal), fishing, harvesting of non-timber forest products (NTFPs), artisanal mining, small trade, temporary employment and handicrafts.

Small-scale agriculture

Growing crops is a major livelihood activity of most Bantu communities in the area. In general people cultivate one or two fields each year, each with an average area of 0.6 ha (Ondoua Ondoua, G. et al, 2017). Most fields are cultivated by the owners, who grow mainly food. Rice is the top cash crop, with an average production of 147 kg per household per growing season, followed by cassava, peanuts, corn, beans, tomatoes, potatoes, vegetables and coffee (Ondoua Ondoua, G. et al, 2017). This produce is sold locally and any surpluses are sent to periodic markets at other locations.

Livestock

Some Bantu families keep free-ranging animals including cattle, pigs, small ruminants (goats and sheep) and poultry (chickens and ducks). The settled Fulani rear large ruminants, mostly cattle and donkeys. Cattle herds range between 150 and 300 animals per herder (Ondoua Ondoua, G. et al, 2017). The problem of space management between herders and farmers can lead to conflict. The Fulani keep cattle as a means of financial investment and although meat and dairy products are used when receiving visitors, to celebrate at festivals and weddings and as gifts, these products are rarely treated as commodities. They are sold only occasionally, to address specific needs.

Hunting

Hunting, both legal and illegal, is the most important source of income for many local people in the area. This hunting can be classified into three main types: firstly, small-scale legal hunting by local people, secondly, small-scale illegal hunting by relatively local individuals and finally, large-scale illegal hunting by armed non-state and state actors. The latter is organised poaching, and the subsequent trafficking of wildlife is often facilitated by political and administrative authorities as well as criminal networks.

Small-scale hunting (both legal and illegal) is an important activity for local communities living around the CCA. Local people hunt in the savannas throughout the year, but most intensively during the rainy season. They hunt with home-made shotguns, wire snares, dogs and sometimes with bows and arrows. Smoking is the usual means of preserving bushmeat, which is either consumed within the household, or sold at

village markets and then often sold on at bigger regional markets. Wildlife by-products, such as horns and skins, are sold or used for ceremonial purposes.

Fishing

Fishing is also essential to local communities, providing an alternative to meat as a source of protein. Many local people fish in the riverheads during the dry season, when fish are most abundant, and much of the catch is consumed by the family. However, a significant proportion of annual income (9.7%) comes from the sale of fish (Ondoua Ondoua, G. et al, 2017).

Harvesting of Non-Timber Forest Products (NTFPs)

The collection of NTFPs provides relatively small quantities of diverse food items and commodities. People collect bark (for traditional medicine), caterpillars, Gnetum Gnetum africanum (koko) leaves, honey, Marantaceae leaves, mushrooms and seeds. NTFPs are used in the home, as well as to bring in cash (Ondoua Ondoua, G. et al, 2017).

Artisanal mining of gold and diamonds

Some illegal gold and diamond mining took place inside the project area.

Trade

Small trade appears to be a marginal activity for most local people in the region. The products they sell come from hunting and poaching (bushmeat), farming, livestock rearing and fishing (fresh and smoked fish), and include cassava flour, fresh cassava, honey, koko leaves, mushrooms, peppers, plantain, taro leaves and wild yams (Ondoua Ondoua, G. et al, 2017). These commodities are often sold at gold and diamond mines. Small traders also sell necessities such as cooking salt, matches, paraffin, soap and sugar. Foods found for sale at local markets include avocados, corn, eggs, peanuts, rice, tomatoes and occasionally cows' milk.

Temporary employment

Several types of temporary employment are available in the region: short-term jobs as porters and/or guides to take part in surveys, research and monitoring, or demarcation and zoning missions. Other temporary work opportunities involve the clearing of fields, digging sand, loading and unloading of vehicles, and assisting with river transportation between towns (Ondoua Ondoua, G. et al, 2017).

Handicrafts

Local people make baskets, crossbows, fishing traps, furniture (such as chairs and shelves in bamboo, cane and wood), raffia mats (used as roof lining) and satchels (made of cane and lianas used to carry food).

Demographics

In a 2006 census, the Mbomou prefecture had a population of 180,300 inhabitants, with slightly more women (91,550) than men (88,750). The population density was 2.9 inhabitants per km² (Ondoua Ondoua, G. et al, 2017).

Housing

In the villages adjacent to the CCA, traditional houses are made of clay or fired brick, with mud floors and roofs of straw or palm leaves. Some houses have corrugated iron sheeting roofs. The Fulani live in small mud-floored huts made of straw.

Access to water

The project has restored the water points in the Bakouma Township, while the Rafai Township has several water points that are maintained by the communities themselves. Nonetheless, the total number of water points in the region is inadequate.

Access to healthcare

Around the CCA, most people requiring treatment attend clinics in Bakouma, Bangassou or Rafai. The persisting civil conflict in the region does have an impact on the hospitals of Bakouma and Rafai. This impact can be seen by the absence of doctors and senior medical staff in these towns. The Bakouma clinic has 15 staff, and surgeries are performed regularly, but serious cases are transferred to Bangassou, 130 km from Bakouma and 150 km from Rafai. Médecins sans Frontières also provides some healthcare in the region (Ondoua Ondoua, G. et al, 2017).

Education

There are few schools at the periphery of the CCA. The Bakouma Township has two schools (one in the centre of Bakouma and one in Fadama). There is also a school in Zemio and one in Lengo. The Rafai Township has 11 schools with five permanent teachers, but some teachers have over 150 students per class. The middle schools in Rafai and Bakouma are managed by the Catholic Church and are not free. To address the lack of teachers, informal teachers (schoolmasters or parents) are employed. Many classrooms have unfinished walls, floorings in poor condition, leaking roofs and no blackboards. Schools are faced with a persistent lack of educational materials, and the books available have to be shared amongst pupils. The closest secondary school is in Bangassou. Only about 20% of primary students enrol in the secondary system, and an even smaller portion of them complete secondary education (Ondoua Ondoua, G. et al, 2017). Most children belonging to the semi-nomadic communities do not attend formal schools.

Communications and roads network

The Bakouma and Rafai townships have a phone network. The towns of Bakouma and Rafai are linked by a deteriorated dirt road. Few people in this region own a vehicle, therefore traffic is mainly by means of 4x4 vehicles belonging to international NGOs and heavy goods trucks. Motorcycles are a more common means of transport, but fuel costs are high. Most local inhabitants walk or use a bicycle to go to their fields or visit neighbouring villages. There are several airstrips in Mbomou prefecture, including a landing strip at the project's headquarters.

Household income

Hunting is by far the most important source of income for households (59.5%), four times that generated by agriculture (15.1%) and six times the money earned from fishing (9.7%) (Ondoua Ondoua, G. et al, 2017). It is unclear how much of this comes from legal sources. It is, however, unlikely that such high income comes from legal sales alone.

2.1.7 Project Zone Map (G1.4-7, G1.13, CM1.2, B1.2)

Figure 3 below presents the project zone map which include the project area and the current instances and the location of the communities already consulted and expected to be impacted by the project activities and the land use plan.¹⁷ This area is subject to changes once new instances are added, it is expected that in

¹⁷ Full-size map available in the supporting documentation

the future communities in the central and northern part of the reference area will be positively impacted by the project.

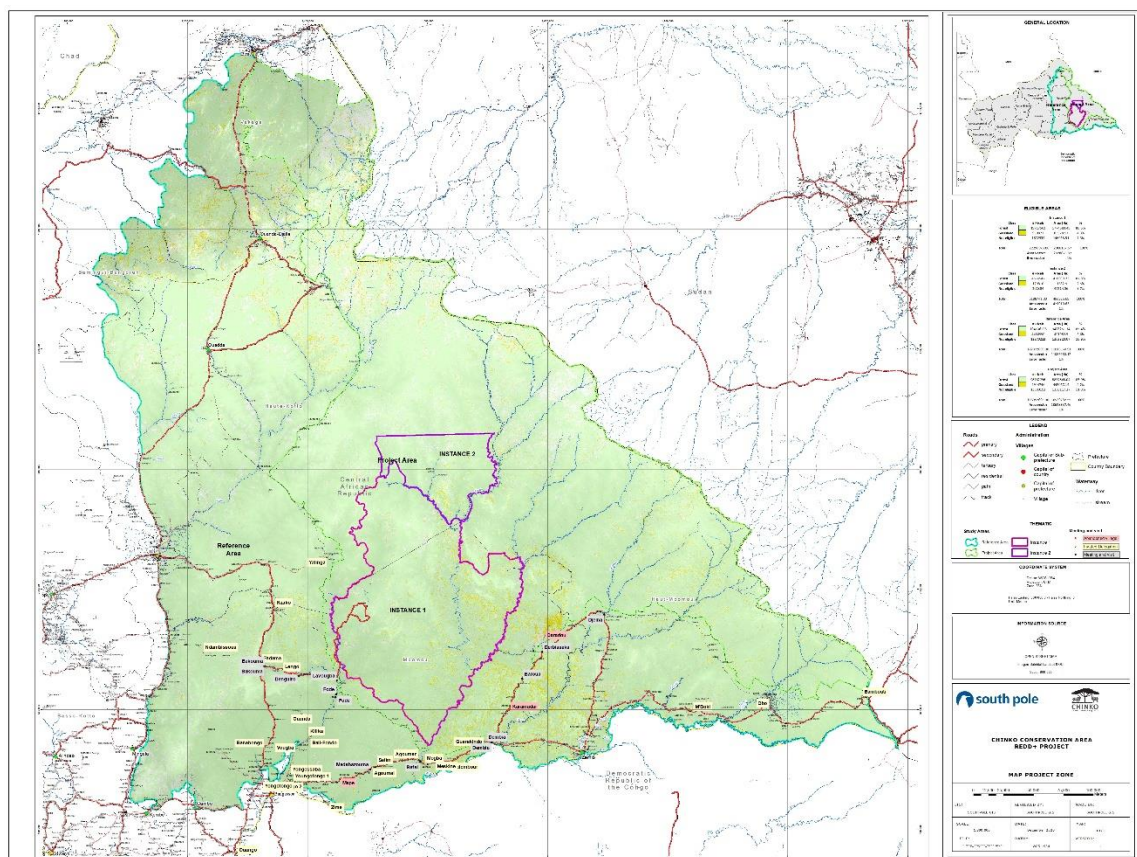


Figure 3: Project zone map

2.1.8 Stakeholder Identification (G1.5)

Although the CCA is uninhabited, it was important to consider any local communities and other stakeholders in the larger region. A process of stakeholder identification and analysis was therefore essential.

Local communities are defined as all groups of people who derive income, livelihood or cultural values and other aspects of well-being from the project area. In the case of this project, these communities are sedentary communities that live on the periphery of the project area. Other stakeholders are all other groups other than local communities who affect or are affected by the project activities. These other stakeholders include government agencies, NGOs and the transhumant pastoralists that enter the CAR from the Darfur region of Sudan to graze their cattle.

For the identification of stakeholders, the influence area of the project was established, as well as the communities and other stakeholders that will be directly or indirectly impacted by the project. The stakeholder identification also considered the main drivers and agents of deforestation and degradation in the project area.

The main stakeholders that were identified that could be directly or indirectly impacted by the project were the local communities that live on the periphery of the CCA and the transhumant pastoralists that enter the country from the north. The sedentary communities living in the eastern CAR are dependent on subsistence agriculture activities as well as hunting, and the use of other forest resources for consumption or as a source of income. The transhumant pastoralists come mainly from the Darfur region of Sudan and have only recently begun driving their cattle deeper into the CAR and the project area. These stakeholders have been identified as one of the main agents of deforestation and degradation in the project area.

Environmental and governmental entities that may have potential interest in the project were also identified. The government agencies were identified according to the roles of each one considering the project activities and the permits needed. The NGOs and intergovernmental agencies were identified, taking into account major programmes in the region and how they could contribute to the objectives of the project.

The stakeholder identification and analysis then assessed the rights, interests and relevance to the project for each stakeholder group. See section 2.1.9 for more details.

2.1.9 Stakeholder Descriptions (G1.6, G1.13)

Table 1: Main stakeholders in the project area

Stakeholder	Classification	Rights, Interest and Overall Relevance to the Project
African Parks (AP)	Project proponent	Africans Parks, as the project proponent, is responsible for the coordination of all aspects related to the implementation of the project.
The Ministry of Water and Forestry, Hunting and Fishing	Other stakeholder (National government)	Ensure interventions in the project area are compliant with national regulations and provide support when needed. Implementation of national environmental policies. Habitat and wildlife protection. Law enforcement.
The Ministries of Internal Security and Defence	Other stakeholder (National government)	Ensure interventions in the project area are compliant with national regulations and provide support when needed. Law enforcement.
Private philanthropic and international institutions	Other stakeholders	Financial donors
Local sedentary	Local	These local communities are mainly found to the south and east of

communities	communities	the project area, but communities from the northern part of the country will join the project at later instances of the grouped project. The sedentary communities living in eastern CAR are dependent on subsistence agricultural activities, as well as hunting and the use of other forest resources for consumption or as a source of income. The following villages are located around the periphery of the project area: Nzako-Bac (Yakossi), Oua (Lavougba), Fodé, Kitika, Ouanda, Dénguiro, Agoumar, Sélime, Madabazouma, Banga, Yongofondo, Bangassou, Ouango, Yongossaba, Vougba, Balifondo, Rafai, Mogba, Meskiné, Katembour, Guérékindo, Dembia, Baroua, Derbissaka, Djéma, Lengo, Bakouma, Nzako, Yalinga, Bria, Bani, Bangana, Sam-Oundjia, Ouanda-Djallé, Ouadda, Birao, AmDafok, Karamadar (if people return), Banim (if people return), Daradou (if people return)
Transhumant pastoralists	Other stakeholder	The transhumant pastoralists come mainly from the Darfur region of Sudan and have been identified as one of the main agents of deforestation and degradation in the project area.

2.1.10 Sectoral Scope and Project Type

The project falls under scope 14 'Agriculture, Forestry and Other Land Use' (AFOLU) in the category of REDD Avoided Unplanned Deforestation and Degradation (AUDD). It is a grouped project that aims to protect areas covered with natural vegetation in the eastern part of the country which are expected to be converted, degraded and deforested in the absence of the project.

2.1.11 Project Activities and Theory of Change (G1.8)

In 2014, African parks signed a 50-year mandate with the government of CAR, a mandate that was renewed in 2020 for 25 years. Previous to the arrival of AP to the area the situation of hundreds of cattle in CCA was devastating for biodiversity and soils, considering this, during its first years on site AP focused mainly on the law enforcement activities from a biodiversity perspective, the initial activities helped to avoid uncontrolled pastoralism in the pristine habitats, later on, and in order to build trust with the communities surrounding the project, some activities focused on solving specific problems for the communities.

African Parks as an organisation acting in many countries of the continent, has pioneered the 'Public-Private Partnership' (PPP) model for protected area management. This model guarantees full responsibility for all park management functions which fall in to five pillars (Table 2) and ensures that we are 100% accountable to the government – who remains the owner and determines policy for the landscape.

Table 2: Key pillars

Pillar	Action	Output
Biodiversity conservation	Restore, monitor and evaluate critical landscapes	Ecologically functioning ecosystems
Community development	Engagement, education and enterprise activities	Support base for conservation, poverty alleviation and economic development
Tourism and enterprise	Accelerate economic development through income generating opportunities	Creation of a conservation-led economy
Law enforcement	Secure and protect national parks and reserves	Safety and security for people and wildlife
Management and infrastructure	Develop infrastructure and governance frameworks	Effective park management and robust governance

For the REDD project an identification of the agents and drivers of deforestation, an intervention matrix and a theory of change were developed considering the five key pillars of the organization and the most recent 5-Year-business plan (5YBP) for the park. The main deforestation agents are identified as pastoralists, follow by local communities and finally poachers and traders while the main drivers are identified in section Identification of Agents and Drivers of Deforestation.

To explain how the project intends to achieve its climate, community and biodiversity (CCB) objectives, the theory of change considers activities that are expected to generate benefits for CCB. In the long-term AP is looking forward to the outcome of creating sustainability for the protected area. Which means to carry out in-side and out-side activities as shown in the 5YBP.

The Chinko management team today is keeping the cattle out of the boundaries of the CCA and local fauna and flora are reclaiming their place. There are no communities located in the CCA, but there are peripheral communities that rely on natural resources. These are a priority for Chinko, so promotion on sustainable and controlled use of natural resources and benefiting from the new law enforcement dynamics, along with different project development, are supporting the communities.

The main strategies followed in Chinko are:

- Building necessary infrastructure, including telecommunications, administrative facilities, roads, bomas, workshops and housing and the ongoing maintenance of this infrastructure and equipment.
- Implementing an effective law enforcement programme through the equipping, training and management of rangers.
- Managing relationships with neighbouring people and implementing community projects to ensure that they benefit from Chinko's existence.
- Creating the conditions for conservation and habitat management including restoration and maintenance of ecosystems while enhancing the status of endangered species and increasing wildlife population.

The remainder of this section will provide further details on the project activities on a short, middle and long-term outcomes. The impacts of these activities will help achieve sustainability for the protected area, also taking into account that AP has been managing the area prior to the writing of the PDD, so some activities that will be described have already commenced while others are still under development and will be

implemented at the appropriate time. More details will be provided wherever necessary.

Biodiversity conservation

The goal is to conserve biodiversity by creating a more ecologically functioning ecosystem while reducing the current pressures of poachers, fishermen and pastoralists that damage the habitat. The Chinko Conservation Area conserves endangered and vulnerable fauna according to the IUCN Red List (see Table 22). Therefore, it is important to have a conservation and habitat management plan/structure, that can create the proper conditions for restoration and maintenance of ecosystems with complex interactions.

These activities involve the research and monitoring of wildlife and human activities that is conducted to optimize conservation activities, and document how wildlife population and habitats are developing. As an example of collaboration alongside with the community, CCA had had the challenge to plan the biodiversity conservation area zoning, in relation to key species that will help maintain and restore key habitats, species and ecosystem.

Eco-monitors secure the area of influence and sensitize hunters, fishermen, miners, loggers and local communities and authorities to promote sustainable use of natural resources that prevent impacts on Biodiversity conservation. In addition, are helping to incorporate in the land-use planning the Transhumance Pastoralism Corridor (TPC), the Hunting and Fishing Community and Non-Timber Forest Products areas, considering that these are latent local needs for community, and that these activities are all part of a historic review over socioeconomic behaviour and are embracing the relationship between CCA and the communities.

The development of GIS mapping and Data Analysis System (DAS) to capture wildlife and socioeconomic information will inform adaptive management, planning improvement, and scientific knowledge. This understanding of the territory can give a better approach to governance and local needs, articulated with sustainability goals. The activities, therefore, will have a positive impact on the community well-being and in the biodiversity conservation.

Community development

The activities surrounding community development have to do with in-side and out-side park activities as mentioned before. This condition is important and relevant because in CCA there are no communities living inside, and villages that are situated nearby denote a threat, especially concerning the practice of small-scale agriculture, which is common amongst local communities and involves clearing the forest in small areas. This impact creates several damages to the ecological functions related to biodiversity conservation, climate regulation and water quality in the region. Therefore, activities were disseminated in the main groups that are improving the relationship with community's development.

Educational support and interventions

CCA gives support and promotes the investigation and research by university graduates from Agriculture/Forestry departments and will employ local people with university degrees completed in the short and middle term. This will contribute to the strengthen of local skills, creating welfare development and self-sustaining business development, will achieving community support for conservation, increasing the incentives for conservation and improving educational levels. Commercial enterprise development is key to create new income and this support will create a new generation of entrepreneurs with local sustainable business.

Eco-monitors who carry out sensitization's meetings on sustainable use of natural resources have a good relationship with the communities and are constantly promoting the understanding of the benefits of wildlife/habitat conservation and sustainable use of natural resources.

CCA is supporting schools and salary payment of parent-teachers (Bangassou, Bakouma, Rafai and Nzako) and participates in different activities around education in the area. CCA is also helping with healthcare facilities and sports competitions in the region like the Bangui marathon.

Park visits

CCA is committed to train community liaisons, and brings to the area local leaders, national authorities and government delegates year-round to improve their perception of the area.

CCA is creating a committee to achieve these goals and increase governance for the economic growth of the region applying the land use plan being developed. CCA is continuously maintaining the local roads and will coordinate with local and national delegates and ministers, including civilian agencies/committees the continues development of the infrastructure and facilities to innovate and have better services and products to offer.

As an example, awareness campaigns on park activities, which included information on conservation and related national law were heavily targeted towards villages along the south and western sides of the area and were well received, even attracting the support of local authorities. CCA has strengthened focal point offices in surrounding community to ensure that a positive, shareable message reaches the national audience to promote awareness and constituency for conservation.

These goals are being addressed through sustainable land use planning and developing a local green economy through training and securing basic social services and are complemented with baseline studies and reports in written to better comprehended needs. The Land Use Plan, which includes all required wildlife corridors and exclusion zones, is agreed upon and communicated to communities, and an action plan on consultations to further develop it with stakeholders will/is being be carried out. CCA purpose for a plan and strategy for Greater Chinko are contributing to regional stability and ensuring long term habitat for wildlife as a result. Further development of the Land Use Plan will create the proper conditions for stability in the region are achieved will conserving and protecting wildlife with community involvement.

Tourism and enterprise

The project area requires the necessary infrastructure, security conditions and competent employment to take advantage of tourism and enterprise development for economic impact. Therefore, it is key to determine the potential tourism enterprises that can be develop in the region, considering the common practices that are in place at the moment like sport hunting and eco-tourism. CCA will create a document with potential tourism zones, where it will identify key income generating opportunities by assessing a broad range of tourism development potentials.

On the other hand, CCA has been and will continue to consult, control and advice tourist operators; load-bearing capacity, fees, seasonal portfolio on products and services among other commitments. The increase in revenue and employment creation from tourism activities are contributing to national fiscus as a result of active standard partnership agreement and conditions for external operators.

Law Enforcement

Given Chinko's geopolitical situation, providing security to the park, its wildlife and surrounding communities is of utmost importance to the long-term viability and survival of this entire area where pressures like transhumance, poaching among others need to be monitor and controlled. To standardize and ensure the

highest level of technical competence and professionalism, law enforcement training is and will be carried out for the entire Ranger unit. While the role of eco-monitor team key focus is to monitoring camera traps to document wildlife within the core area, the eco-monitor teams work to ensure the park's boundaries are respected, as well as tracking human activity within CCA to protect the habitat. They are often first responders and able to call for prompt intervention as needed.

Ranger patrolling in Chinko is critical for the habitat security. The team does confiscations, sensitization and if necessary, send the captured to the relevant authorities to be apprehended. Safety and security for people and wildlife, and effective procedure with local authorities/ethnic groups and institutions are also carried out when special cases demand it. CCA will plan the restructuring of law enforcement personnel (rangers, eco-monitors, eco-transhumance officers and control room operators) to improve leadership and discipline, prevention of illegal wildlife poaching in the middle term period.

As a result of law enforcement, CCA expects to achieve a core protected area free of cattle and poaching cases confined to the periphery, will increasing habitat security, protect wildlife and promotion of the comprehensive habitat management plan will thrive the socio-ecological habitat.

Management and infrastructure

Chinko remains the largest employer in Eastern CAR with local people engaged, full and part-time. This development of capabilities will stabilize operations and management, will improve cost-efficiency and enhance credibility. Functional offices infrastructure in the surrounding communities of Rafai, Bakouma and Bangassou are operating and maintenance of headquarters and associated infrastructure is continuously progressing. CCA will build a Community Center in Rafai and Bangassou, will continue with the functional operational bases in Chinko (rentals of existing housing/office/storage facilities secured). In the middle term construction of housing facilities for senior, middle and low management staff will be carried out, as well as maintain existing and expand on as required airstrips and Forward Operating Bases (FOBs) in the park, that allows for essential management access, taking seasonality into account.

As CCA improves human capacity, is strengthening the relationship with these communities and promoting the SPA, which serves to standardize operations. Some of the activities that the staff carries on, which serves both staff and community, are the annual road clearing and basic repairs by the road maintenance team.

Improved governance is key for the project area to thrive. Due to training and capacity building development Chinko is innovating in the operation by creating a fit for purpose vehicle and aircraft fleet for park. This includes the provision of air link between Chinko HQ, Bangui and Garamba that allows for adequate personnel and cargo transportation, ensure presence and control throughout the protected area. On this matter CCA will refurbish the vehicle and aircraft fleet operating and will acquire new vehicles and aircraft fleet, following a maintained plan that is prepared.

As for applied technology, to maintain and provide new access on Networks and Information technologies for staff to be better connected, CCA is improving the information network with associated incentive scheme with local partners that will result on a collaborative Early Warning System (EWS) and information sharing platform to acknowledge and provide stability and enabling effective management. Communications infrastructure will provide efficient and secure communication/internet for Chinko operations which includes networks improvement and maintenance: Garmin Delorme network, Iridium, etc... reducing human-wildlife conflict.

As a conclusion impacts on the five pillars will contribute directly to AP Mission (to have conservation impact in Africa for the benefit of both wildlife and people through the management of a diverse portfolio of

protected areas that is environmentally, socially and financially sustainable) and project objectives in the short, middle and long term goals by ensuring that (i) the project area enjoys optimal management through a well-equipped, trained and motivated staff operating effectively over the entire area of intervention; (ii) local communities actively support the project's conservation goals and use natural resources in a sustainable way; and (iii) local communities are empowered through the implementation of productive sustainable income generating activities that link the projects conservation objectives with revenue opportunities, the project will achieve its CCB objectives.

For more details on the agents and drivers identification and its estimated deforestation caused, the interventions planned, its expected outputs, outcomes and impacts and the list of activities see Annex 1.

2.1.12 Sustainable Development

According to the information provided by the Sustainable Development Report 2020,¹⁸ the CAR is the world's lowest-ranked country with an overall score of 38.54 out of 100. This score measures a country's total progress towards achieving all 17 SDGs and can be interpreted as the percentage of achievement.

The country has only achieved two out of 17 SDGs (Climate Action and Life on Land) and it is not possible to ranked it in one: Life below Water. For the remaining 14 SDGs major challenges are still ongoing in order to achieve the SDGs goal (see Figure 4). The trends shows that the two achieved SDGs have a maintained achievement, two of the 14 SDGs not achieved are on track to being achieved, six are stagnating or increasing at less than 50% of the required rate, three are decreasing and three more have no trend data information available (see Figure 5).

As the data shows, it is a major challenge for the country to be on track to achieve the SDGs, the project intends to contribute to maintaining the achieving SDGs (13 and 15) and also to improve the current assessment on at least three more (see Table 3).



Figure 4: Current Assessment - Sustainable Development Goals achievement

Source: SDG dashboard

¹⁸ Available at: <https://dashboards.sdgindex.org/static/countries/profiles/Central%20African%20Republic.pdf>

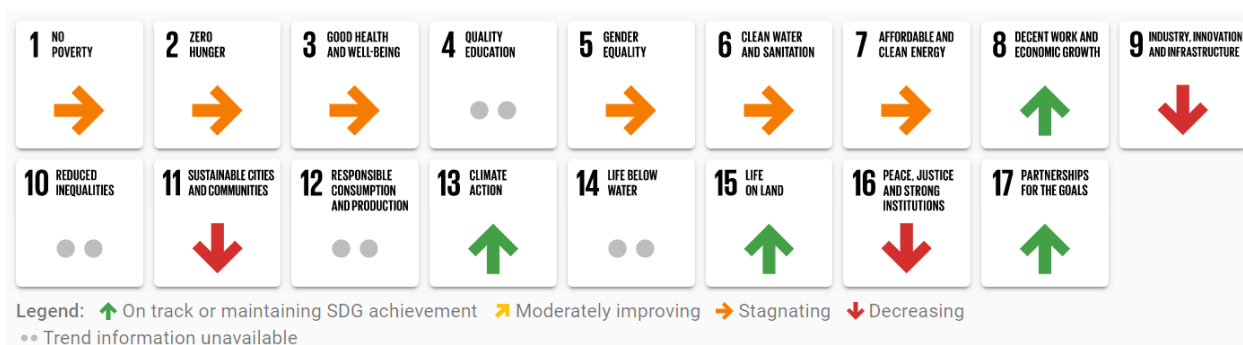


Figure 5: Trends on SDGs achievements

Source: SDG dashboard

Table 3: Project SDGs contribution

SDG	Contribution description	Monitoring description
SDG 1 – No poverty	Chinko is the largest employer in the region.	Number of people employed Percentage of employees earning a salary above the poverty headcount ratio at \$1.90/day (%) Percentage of employees earning a salary above the poverty headcount ratio at \$3.20/day (%)
SDG 8 – Decent work and economic growth	Chinko is the largest employer in the region and aims to protect labour rights and promote safe and secure working environments for all workers.	Percentage and number of employees earning a monthly salary above the national average Frequency rates of fatal and non-fatal occupational injuries
SDG 10 – Reduced inequalities	Chinko is the largest employer in the region. African Parks is an equal opportunity employer and aims to eliminate all forms of unfair discrimination such as race, ethnicity or gender in the recruitment and selection of staff.	Proportion and number of employees earning below 50 percent of median income
SDG 13 – Climate action	Integrate climate change measures into strategies and planning.	Net estimated emissions reductions in the project area, measured against the baseline scenario
SDG 15 – Life on land	Chinko plans to progressively increase the protected area and promote the implementation of sustainable management, halt deforestation and help to restore degraded forests.	Chinko forest protected area (ha)

2.1.13 Implementation Schedule (G1.9)

Date	Milestone(s) in the project's development and implementation
June 2014	Chinko project and the government of the CAR sign an agreement for the management of the hunting zones N° 39, 40, 41 and 48.
December 2014	Chinko became the eighth protected area in the African Parks portfolio.
December 2014	Strategic relationships were developed with conflict research groups and regional military task forces based in the area, in order to advance the overall stability and improve the governance in the eastern CAR region.
2015	Management and Infrastructure: Construction of the headquarters, securing a core protection zone within the park.
September 2016	Project start date: Sensitisation meetings with transhumance herders regarding Chinko's boundaries.
2016–2017 Dry season	Community Development: Focus on sensitisation and relationship building with local leaders and community members.
March 2017– April 2018	Humanitarian assistance: Staff in Chinko provided safety and security to around 380 internally displaced people (IDP) who have fled the violence in neighbouring towns held by rebels. The refugees remained for several months until the ethnic violence subsided, and they were able to safely relocate back to their villages. Some of them have been hired as transhumance sensitisation officers, helping their community and reducing the threats that arise from armed cattle herders.
July 2017	On arrival of the transhumance herders from the north, sensitisation teams were deployed to speak with the herders and raise awareness about Chinko and its borders. They were able to direct the herders around the protected area.
November– December 2017	All the rangers completed refresher training and advanced tactical training.
December 2017	Park management and infrastructure development: CCA organised a conference focused on 'Exploring the intersection between conservation and peacebuilding in Central Africa', and targeted key stakeholders including donors, conservationists and institutions.
2017–2018 Dry season	Sensitisation teams continue to be deployed in the field on the known cattle roads to divert groups around the park.
Second semester 2018	Law Enforcement: Chinko also recruited, trained and deployed 32 transhumance sensitisation officers to monitor and educate transhumant herders coming into the CAR from Sudan, one of the major threats in the area.

Date	Milestone(s) in the project's development and implementation
September 2018	Community Development: community sensitisation meeting held in Bangassou saw significant results. Through direct communication with the community, the meeting opened the door to future socio-economic development opportunities.
November 2018	30 transhumance sensitisation officers were recruited and went through an extensive training programme, learning navigation with locus software and usage of satellite devices.
2018–2019 Dry season	Multiple teams of rangers, transhumance sensitisation officers and eco-monitors were deployed. Not only does this help to secure the CCA but it contacts numerous herders from Sudan and has a significant impact on directing the grazing of these people and the probability of conflict. Almost the entire CCA remained cattle-free during most of the season.
January–February 2019	Biodiversity Conservation: Chinko and Vovodo River expedition. 200 km of the Chinko River and 15 km of the Vovodo River was surveyed.
March 2019–July 2020	Community Development: local stakeholder consultation and discussions about a comprehensive land-use plan for the periphery of the Chinko conservation area. The meetings covered all communities (permanent settlements) in the west, south and east of the CCA.
July 2019	Biodiversity Conservation: the first standardised aerial minimum count along major floodplains was executed. The observation of a herd of 52 Eastern Giant elands, six independent groups of 75 eastern buffalo and 11 events of 32 defassa waterbucks, as well as the sighting of an adult roan male antelope along the 580km transect indicate that larger herbivores are widely spread in the Chinko Nature reserve and continue to recover.
September 2019	Community Development: the CCA was pleased to host various dignitaries, ambassadors and ministers including CAR's United States (US) ambassador, USAID director and the Minister of Water, Forestry, Hunting and Fishing
Nov 2019–Jan 2020	Law Enforcement: training was carried out for the entire ranger unit.
2019–2020 Dry season	Unarmed ECO and transhumance teams in the field, working to sensitise the local communities in the periphery of the park. Chinko remained free of cattle.
February 2020	Community Development: a presentation of Chinko was made at the US ambassador's residence to key stakeholders in the region. Attendees included representatives from World Bank, the Chinese Embassy, the French Embassy, AFD (French Development Agency), the head of UN Office for the Coordination of Humanitarian Affairs (OCHA), the US Embassy and the Office of U.S. Foreign Disaster Assistance, the National Assembly and the Minister of Water and Forestry. It was followed by a similar presentation held at OCHA during inter-cluster meetings to all UN bodies and INGOs.
April 2020	An agreement to expand the protected area to 5.5m ha was signed, start date for the second instance.

Date	Milestone(s) in the project's development and implementation
October 2020–early 2021	Community Development: local stakeholder consultation and discussions about a comprehensive land-use plan for the periphery of the Chinko conservation area.
November 2020	The last illegal mine within Chinko borders was peacefully closed on the 26 November.
November 2020	Forest monitoring process started.
Late 2021	Envisaged first verification covering the period 2016–2020.

2.1.14 Project Start Date

The project start date was 15 September 2016. In this month Chinko started the first campaign with sensitisation officers in the field informing the transhumance pastoralists of the importance of the project area and the necessity to avoid using the area as a route. This activity led to successful management of the cattle inside the project area during the 2016–2017 dry season.

2.1.15 Benefits Assessment and Crediting Period (G1.9)

The crediting period is from 15 September 2016 to 14 April 2045. The length of the crediting period is 28 years and 7 months.

2.1.16 Differences in Assessment/Project Crediting Periods (G1.9)

There are no differences between the GHG emissions accounting, climate adaptive capacity, and resilience, community, and biodiversity assessment periods.

2.1.17 Estimated GHG Emission Reductions or Removals

Year ¹⁹	Estimated GHG emission reductions or removals (tCO ₂ e)
Sep 2016 – Dec 2016 ²⁰	144,359
2017	538,464
2018	612,777
2019	694,683
2020	938,030
2021	1,117,952

¹⁹ Following the VCS Standard requirements, ex-ante baseline projections beyond a 10-year period are not included.

²⁰ For a better alignment of future instances, the project calculates the emission reduction in a calendar year basis.

2022	1,253,516
2023	1,400,955
2024	1,565,483
2025	1,733,135
2026	1,917,536
Total estimated ERs	11,916,890
Total number of crediting years	10
Average annual ERs	1,177,253 ²¹

2.1.18 Risks to the Project (G1.10)

Table 4: Project risks

Identified Risk	Potential impact of risk on climate, community and/or biodiversity benefits	Actions needed and designed to mitigate the risk
Political risk – weak governance ratings	The CAR is one of the least developed and poorest countries in the world and scores low across all governance indicators of the World Bank (average score of -1.55 for the period 2015–2019). ²² This could put project activities at risk if government decisions make the incentives for avoiding deforestation less attractive and/or important.	The CAR is a member of the forest carbon partnership. The country has submitted a readiness plan idea note (R-PIN) and a readiness preparation plan (R-PP). This shows that the government is serious about its REDD commitment. Furthermore, African Parks has signed an agreement with the national government to take responsibility for the management and financing of the project area. This is a legally binding commitment to continue management practices that protect the credited carbon stocks over the length of the project crediting period. Finally, the project area is one of the largest employers in the region and maintains healthy relations with various government ministries, particularly the Ministere Eaux, Forêts, Chasse et Pêche (Ministry of Water, Forests, Hunting and Fisheries).

²¹ Average for 2017 – 2026

²² Supporting Information: [NPRT\2. External Risks\Political Risk]

Identified Risk	Potential impact of risk on climate, community and/or biodiversity benefits	Actions needed and designed to mitigate the risk
Political, environmental, and social risk – political instability and conflict in neighbouring countries	The political and social instability in neighbouring countries such as the Republic of South Sudan could result in the displacement of people in the region. This may result in an influx of people (including herders, poachers, armed groups and foreign fighters) into the project area. Environmental degradation in these countries could further increase this influx of foreign herders in the project area in search of fodder for their cattle.	The project actively engages with transhumant pastoralists that enter the project area, particularly from Sudan. African Parks have a good relationship and have developed high levels of trust with these herders over the past few years. This allows the project to work together with the pastoralists to identify corridors through which to move that have a minimum impact on the biodiversity and carbon stocks within the project area, while also minimising potential conflict with local populations.
Political and social risk – security and the proximity of the project area to the territories of known rebel groups.	Various rebel groups are active in the region where the project area is located. This could result in violence towards staff, local communities and put project activities at risk.	The project takes security in the region seriously and has hired, trained and equipped a sufficient number of rangers to protect the project area and local communities. In fact, local communities attribute the relative high security in recent years directly to the project. African Parks also engages regularly with government and other groups (including ex-members of rebel groups) to continue improving security in the region.
Community risk – reliance on natural resources	The communities living on the periphery of the project area are reliant on natural resources for their livelihoods, particularly on bushmeat as a source of subsistence. This may result in conflicts with the project with regards to law enforcement in the project area.	The project aims to ensure communities have access to natural resources that they rely on. The project aims to establish buffer zones that are managed together with communities, where sustainable use of natural resources is allowed. The project, with the support of various donors, is also looking at expanding its presence to support surrounding communities and discuss with focus groups (hunters, fishermen) the best

Identified Risk	Potential impact of risk on climate, community and/or biodiversity benefits	Actions needed and designed to mitigate the risk
		practices leading to sustainable use of resources. The active management of the CCA and the buffer zones will allow hunters and fishermen to find more and higher quality hunting game in close proximity of their villages for an efficient harvest that allows for sustainable practices.
Natural risk – fire	Fires are common during the dry season in the savannah. These fires could pose a risk to the carbon stock in the project area.	Fires are common in the project area and play an important role in the healthy functioning of the ecosystems in the region. The project has developed a comprehensive fire management plan which it regularly implements. These controlled fires ensure that larger, uncontrolled fires later in the season are unlikely to occur.

2.1.19 Benefit Permanence (G1.11)

As previously explained in section 0, the theory of change assumed for the project intends to create a long-term benefit maintained beyond the project lifetime. One of the main reasons to believe so is the land use plan currently being developed taking into account the inputs received from the different communities in eastern CAR during the consultation process.

The land use plan wants to achieve a more sustainable use of the land considering the important biodiversity of the area. The activities will have a positive impact on the community well-being and also in the biodiversity conservation.

2.1.20 Financial Sustainability (G1.12)

As identified in the non-permanence risk tool, the financial factor and the project autonomy to get its own resources are the most significant challenges for the project's development. However, African Parks has adopted financial mechanisms to provide an adequate actual and projected flow of funds for the project implementation in order to achieve the objectives, as shown in the cashflow.

For the 2017 – 2030 period the project has secured around 27% of the funds required, without the projected revenues from selling Verified Carbon Units (VCU). It is expected that the carbon credits would provide significant resources to continue developing project activities, which would not have been possible without them.

2.1.21 Grouped Projects

1) Eligibility Criteria for Grouped Projects (G1.14)

The eligibility criteria for the project meet the applicability conditions set out in the methodology (see section 3.1.2). The eligibility criteria have been designed to only include new instances which correspond to the areas in the eastern wilderness with similar characteristics to the project area. This makes them subject to the same community and biodiversity without-project scenario described in sections 2.2, 4.1 and 5.1. Also, the eligibility criteria are subject to the baseline scenario and additionality described in sections 3.1.4 and 3.1.5. They will be subject to the same stakeholder engagement as the one described in section 2.3.

2) Scalability Limits for the Grouped Projects (G1.15)

The threshold for the project expansion is defined as the Eastern CAR Wilderness and the Chinko River drainage basin. This is the area in which the long-term plan related to the optimum land use management will be applied, in order to achieve the benefits of the project.

3) Risk Mitigation Approach for Grouped Projects (G1.15)

Considering that each instance of the project will be added once a new agreement with the government is signed and consultation with the local population is made, any new risk to climate, community and biodiversity benefits are not anticipated. On the contrary, the benefits of the project would expand its coverage.

All the related risks should be the same as the ones identified in section 2.1.18 as well as in the AFOLU non-permanence risk tool.

2.2 Without-project Land Use Scenario and Additionality

2.2.1 Land Use Scenarios without the Project (G2.1)

See sections 3.1.4 and 3.1.5, which contain the description of the baseline scenario as well as the potential land use scenarios and the associated drivers of land use changes most likely to occur within the project zone in the absence of the project.

2.2.2 Most-Likely Scenario Justification (G2.1)

The most likely land use scenario in the absence of the project is the continuation of the extensive pastoralism activities implemented without a proper analysis of the land considering its limitations and the impact on the biodiversity as well as the other activities performed in the region like unsustainable mining and shifting agriculture practices. For more details see sections 3.1.4 and 3.1.5.

2.2.3 Community and Biodiversity Additionality (G2.2)

Although the project has activities that generate biodiversity and community benefits, these also face the same barriers as the other project activities (see barriers in section 3.1.5), and without funding from the sale of GHG credits it is unlikely that the project activities would be able to be implemented or continue in the future. The implementation of the proposed project activities will require a joint effort between local communities and African Parks, to guarantee effective conservation and local sustainable development. These activities, without the revenue from the sale of GHG credits, would not be possible.

In the absence of the project, the communities living on the periphery will continue with a lack of employment opportunities, considering that Chinko is the largest employer in the region. Taking into account the fact that the population is characterised by high levels of poverty, as a result, the local communities are greatly dependent on natural resources, which in a without-project scenario will mean continuous deterioration of the biodiversity resources of the area, non-sustainable use of the forest resources and the loss of habitat for animal species of great eco-systemic importance.

Without the project the persistent conflict between transhumance herders and local agricultural communities is also likely to continue. It is likely that conflict over land between farmers and cattle herders in the CAR will, in fact, increase in the future. This would be as a result of the increased cross-border migration from Chad and Sudan to find new pasture as a result of the desertification in the areas north of Chinko. The increased availability of veterinary drugs will further allow these humid regions to become viable migration routes for transhumant pastoralists crossing into the CAR from Chad and Sudan. Without the activities proposed by the project Chinko is likely to see an influx of illegal pastoralists and a rise in conflict between local communities and these seasonal migrants.

Unsustainable hunting and poaching will continue to take an enormous toll on populations of tropical mammals, birds, reptiles and fish species in the project area. It is widely recognised that losses of vertebrate populations can disrupt plant-animal interactions, threatening the integrity of natural ecosystems.²³

For more details see sections 4.1.4 and 5.1.3.

2.2.4 Benefits to be used as Offsets (G2.2)

There are not any distinct benefits for community and biodiversity intended to be used as an offset.

2.3 Stakeholder Engagement

2.3.1 Stakeholder Access to Project Documents (G3.1)

There are local communities living on the periphery of the CCA that were considered within the larger context of the project. There are also other stakeholders in the region, namely the transhumant pastoralists, that could be impacted by the project activities. See section 4 for more details on the communities and other stakeholders in the project region.

Project documentation including the project description, and monitoring reports, has been and will continue to be made accessible to these local communities and other stakeholders as they become available through the project lifetime.

Documentation is translated into French and distributed amongst local communities and local government structures. Due to the high levels of illiteracy amongst local community members, dissemination of the project information is led by local staff, and presentation materials are used wherever possible. The local staff have experience and training in engaging with local communities around the project area, as well as the transhumant pastoralists that enter the CAR from neighbouring countries. To ensure that all relevant information was and will continue to be made accessible to communities and other stakeholders, a

²³ Poulsen, J.R., et al. 2013. Ecological erosion of an Afrotropical forest and potential consequences for tree recruitment and forest biomass.

comprehensive guidance document was also prepared (see Annex 2: Local stakeholder consultation package)

Using their accumulated experience and the guidelines developed, local staff have been able to accurately describe the content of the draft project document (PD), to explain the verification process and the significance of these documents, and to respond to any questions or concerns that may have been raised by community members or other stakeholders to the project. Local staff will continue to provide local communities and other stakeholders with project documents and relevant information through regular engagement, throughout the project lifetime.

Once the project is validated and the first monitoring report is verified, meetings will be held with local communities and other stakeholders to share the final PD and monitoring report. This process will be repeated after each monitoring period.

2.3.2 Dissemination of Summary Project Documents (G3.1)

In addition to the activities described in section 2.3.1, summary project documentation has been actively distributed to communities living on the periphery of the project area. This summary documentation was translated into French. Printed copies of these summarized reports have been distributed amongst communities, local government structures and other stakeholders, where appropriate. The summary documentation included information on the project description, project goals, design, and long-term objectives.

Again, due to the low levels of literacy in the region, the summarised information has also been presented to local community members by African Parks. Meetings were held in surrounding villages to provide details of the following:

- definition of the project's climate, community and biodiversity objectives
- location of the project
- definition of the boundaries of the project area (where project activities aim to generate net climate benefits) and the project zone (where project activities are implemented)
- description of project activities

Information about African Parks, including contact information, was also provided to communities during these meetings. It was explained that community members can contact African Parks at any stage during the project's lifetime to request project information and documentation. African Parks will also undertake regular visits to all communities throughout the project's lifetime to continue sharing information about the project with local communities.

A summary of the initial monitoring report will also be provided to local communities (translated into French and presented orally through community meetings). This report will include information on monitoring results that show that the project has delivered net positive climate, community and biodiversity benefits. During the lifetime of the project all results will continue to be shared among community members through workshops and meetings and in printed form where appropriate.

2.3.3 Informational Meetings with Stakeholders (G3.1)

All informational meetings with local communities and other stakeholders were conducted by local staff who benefit from existing relationships and trust within local community structures. A comprehensive guidance

document was developed to ensure that local teams had a thorough understanding of the requirements set out by the CCB Standards, and training sessions were conducted via phone/Skype calls with staff and project managers on the ground to clarify any questions they had before the informational meetings took place.

All stakeholders were proactively invited to the informational meetings. Due to the lack of communications infrastructure and high rates of illiteracy around the project area, invitations were hand delivered to all stakeholders with an explanation of the purpose of the informational meetings and consultations. Reminders were also played over the radio the day before the meetings to ensure maximum participation.

In total, 14 villages were visited at least once to hold informational meetings with community members. These villages were Bangui, Mbaiki, Bakouma, Denguiro, Lavougba, Fode, Madabazouma, Rafai, Bangassou, Dembia, Derbissaka, Djema, Baroua and Ouanda. Delegates and community representatives from surrounding villages were invited to these meetings to ensure widespread representation from all communities living on the periphery of the project area.

During the informational meetings, nature conservation and sustainable use of natural resources was discussed, including a section focused on deforestation and degradation. The project objectives were also discussed, and possible impacts were identified. The communities' perceptions of the project were encouraged during these meetings.

Meetings in Bria and Rafai were also held that targeted the transhumant pastoralists. These meetings were used to inform the herders about deforestation and REDD programme as well as the project objectives. Hundreds of herders have also been personally contacted by the unarmed transhumance officers and been informed about the project objectives and boundaries. These interactions allowed for the herders to have the project goals and objectives explained first-hand, in the field. A new transhumance regional focal point is currently working with the projects transhumant officers to further improve the quality of information shared with the herders as well as the types of data collected from them. Furthermore, the goal of this focal point is to establish direct connections to pastoralist communities in Darfur in order to organise stakeholder meetings directly in the key pastoralism communities with leaders and influential people.

2.3.4 Community Costs, Risks, and Benefits (G3.2)

African Parks subscribes to the guiding principles for Free, Prior and Informed Consent. They have a strict policy that ensures that the following decision-making processes are taken into account during the development of a project:

1. free from coercion, intimidation or manipulation.
2. prior to allocation of land for particular uses or approval of specific projects. Lead time should reflect respect for time requirements of indigenous consultation/consensus processes.
3. informed at a minimum, and based on full available information, about the nature and scope of any proposed project or activity, including:
 - areas that will be affected
 - the potential economic, social, cultural and environmental risks and benefits
 - type of law enforcement work and possible impact, and
 - the timeframe of the proposed project and organizations/actors likely to be involved.

Information should be in a language easily understood by the affected people, delivered in a culturally appropriate way, and available from independent sources. Communities may also require capacity building on unfamiliar issues to be truly informed.

4. consent requires time and an effective system for communicating among all affected community members and taking decisions through customary or other community-defined decision-making processes. It requires that affected people are able to say yes or no at each stage of the project. Consent is to be given or withheld by the community as a whole; no single individual or representative can make the decision. Consent should result in equitable agreements and should be part of ongoing processes of communication and negotiation, rather than a one-off action.

By subscribing to these principles, it was necessary that communities and other stakeholders were involved in the project through full and effective participation. During the local consultation with the community, project activities, risks and benefits were clearly explained. The community had time for questions in which they expressed their concerns. The impacts of the project activities focused both on impacts on biodiversity and on local communities and other stakeholders.

It was also explained to the participants how the project supports and promotes the following safeguards:

- actions complement or are consistent with the objectives of national forest programmes and relevant international conventions and agreements
- respect for the knowledge and rights of indigenous peoples and members of local communities, by taking into account relevant international obligations, national circumstances and laws
- the full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities
- actions are consistent with the conservation of natural forests and biological diversity, ensuring that the REDD+ actions are not used for the conversion of natural forests, but are instead used to incentivise the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits.

Finally, African Parks also used the opportunity to express its commitment to the principles of “doing good” and “do not harm”.

2.3.5 Information to Stakeholders on Validation and Verification Process (G3.3)

During the local consultation meetings, all participants, workers and communities were informed about the validation and registration process, noting that an external auditor (from a validation and verification body) will visit the area to carry out this process.

2.3.6 Site Visit Information and Opportunities to Communicate with Auditor (G3.3)

The community has been informed in advance of the visit from the auditor through an appropriate means of communication. Community meetings have been held in several towns and villages, with representatives from smaller surrounding villages also invited. The purpose of the auditor visit was made clear and approximate dates of the visit were communicated. During the visit, the auditor will have the opportunity to interview stakeholders close to the project, even in the absence of the project proponent, but with their consent. Likewise, if required by the auditor, some meetings may be held directly with the community and other stakeholders.

2.3.7 Stakeholder Consultations (G3.4)

As with the informational meeting, consultations took place with local communities living on the periphery of the project area, as well as with other stakeholders. As described previously, a comprehensive guidance

document was developed, and training sessions were conducted via phone/Skype calls with staff and project managers on the ground to clarify any questions they had before the consultations started.

Again, invitations were printed and hand delivered in person to explain the purpose of the consultations. Reminders were also played over the radio the day before the meetings to ensure maximum participation. In areas where not all community members were able to attend consultation meetings, community representatives were invited to ensure widespread representation.

Figure 6 shows the villages consulted and in which different meeting has been held during the 2019 – 2020 period.²⁴

A number of consultations also took place with transhumant pastoralists in the region.

In each meeting, participants were given a brief description of the project and the agenda for the day. The agenda was kept as clear as possible, focusing on the explanation of the project. The following agenda points were covered during the informational meetings with stakeholders.

- explanation of the project
- discussion on safeguards in REDD+
- presentation of the project activities
- identifying the project's environmental and social impacts
- discussion on feedback and grievance redress procedure
- discussion on monitoring
- workers' relations

The aim of the project was explained to the stakeholders in detail. This included the project's location, information about African Parks and their motivations, who else is involved, and the project phases and timelines.

In addition, an exercise was carried out in which the participants were asked questions related to the project, through which the community's level of understanding about the project process could be identified. This exercise provided another opportunity for any concerns regarding the project to emerge.

It was clear from the consultation process that local communities and other stakeholders are supportive of the project, its activities, and goals. For example, the consultation process allowed all stakeholders to agree on where the most suitable corridors for transhumant pastoralists will be established. The location for these corridors was discussed in depth during meetings with pastoralists, government, and ex-rebel leaders familiar with the project area.

Similarly, local communities who are engaged in illegal mining activities in the project area have been involved in all the processes of closing the illegal mines. In addition, they have participated in developing the strategy for opening new mines in the transition zone and applying and enforcing responsible mining techniques that have minimal impact on vegetation and the hydrological system.

At the meeting, the complaint procedures and protocols (Feedback and Grievance Redress Procedure) were also explained and discussed to ensure that stakeholders agree that the selected methods are the most appropriate. See section 2.3.12 for more details.

²⁴ Full-size map available in the supporting documentation

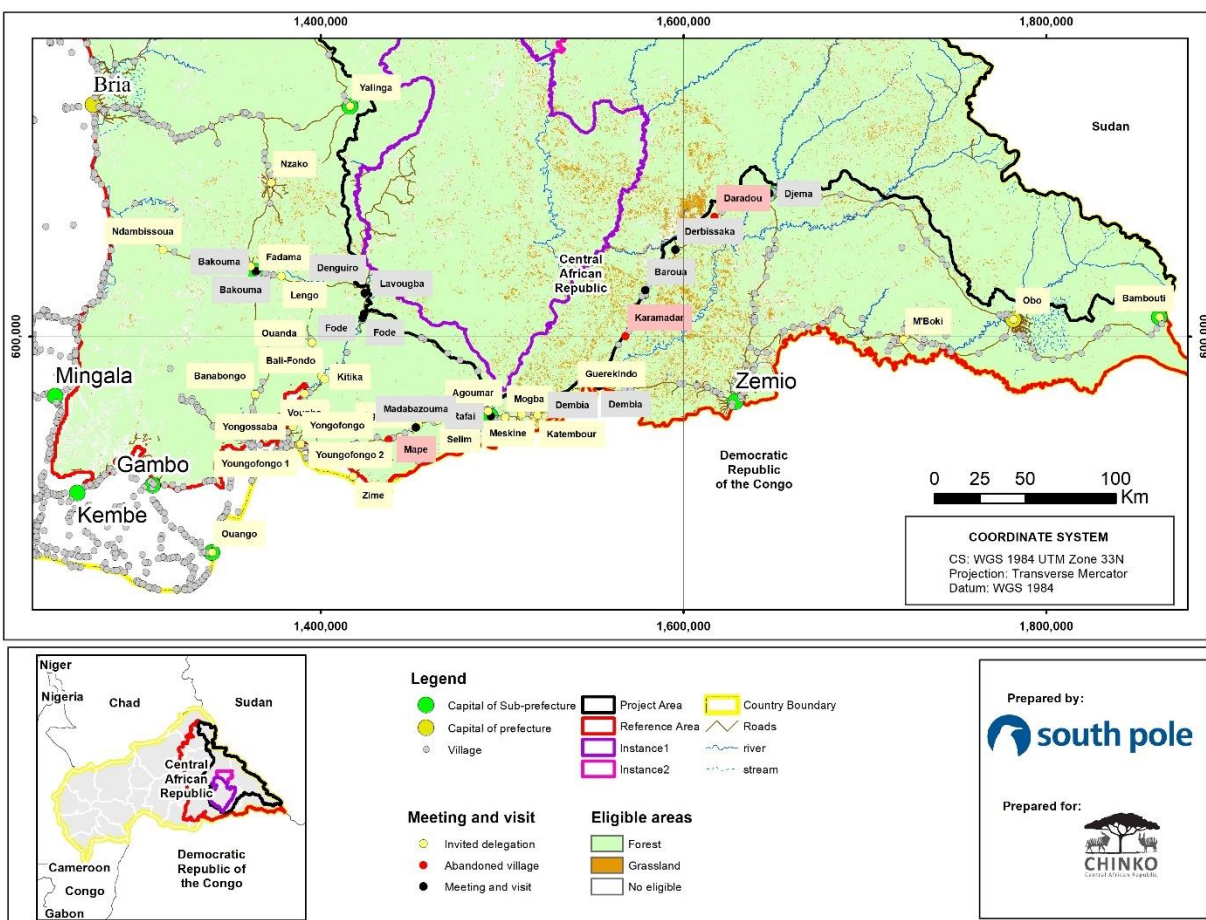


Figure 6: Consulted communities

2.3.8 Continued Consultation and Adaptive Management (G3.4)

Ongoing communication and consultation will take place with local communities and other stakeholders, through the following mechanisms and channels:

- unarmed eco-monitors
- unarmed transhumant monitors (tango team)
- rangers
- ongoing sensitization activities
- community liaisons established in Nzako, Yalinga, Debrikassa and Fode
- school visits

The eco-monitors and rangers will work with local communities on the periphery on the project throughout the year and therefore, be a continuous, ongoing mechanism for communication and consultation between the sedentary populations living in the area and African Parks. The transhumant monitors, on the other hand, will be deployed annually (during the grazing season) to engage with the transhumant pastoralists

when they enter the CAR from the north. This will ensure that there is also effective communication and consultation with these groups and African parks. The community liaisons engage with local communities on a regular basis throughout the year and at least four schools will be visited annually.

The community agents are trained, and deeper discussions and feedback taken least two times per year but many smaller exchanges and short visits are executed during the year. These shorter visits include monthly food provision or payment, special occasions to accompany the field teams, etc.

Because of African Parks' presence in the area, all questions or inquiries of the people should be resolved in a timely manner and all communications will be recorded. See section 2.3.9 below for more information.

2.3.9 Stakeholder Consultation Channels (G3.5)

At each meeting, the contact numbers of the project proponent were shared so that people interested in the project could be involved and engaged throughout the life of the project. The project area is also well known by local communities and has a number of eco-monitors and sensitisation agents that are in regular contact with local communities and the transhumant pastoralists. This provides an effective communication channel that allows efficient and constant communication between stakeholders and the project team.

2.3.10 Stakeholder Participation in Decision-Making and Implementation (G3.6)

During the consultation process, the identification of possible impacts was discussed with the participants. Collaborative working was encouraged, to promote the participation of all attendees (men, women and children) in the group discussion. All participants were encouraged to speak freely and express their opinions without feeling judged.

As stated, extensive engagement has taken place between African Parks and local communities living around the CCA. The REDD+ project has been communicated to all stakeholders, but beyond that, engagement has been taking place since African Parks signed their agreement with the government to manage the CCA. This has ensured that African Parks understands the local culture and encourages effective participation. The project can only succeed in the long-term with sufficient community buy-in, and African Parks has been actively working to build a local constituency for conservation among local communities. Rangers, unarmed eco-monitors and unarmed transhumant officers are all hired from within the local communities to ensure cultural sensitivity is maximised. Similarly, African Parks has worked closely with the transhumant pastoralists that enter the CAR from Sudan to ensure that alternate grazing corridors do not create conflict and can meet the herders' needs.

Building community capacity is an important focus of the project activities in order to ensure the involvement and input of communities during the project life cycle. The feedback of participants from all meetings and workshops are considered and incorporated in the ongoing land-use plan that is being developed. A good example is a second Transhumance Corridor in the south after local herders and farmers agreed on developing a corridor through Niakari but admitted the complexity of this task and proposed a corridor north of Niakari as a short-term solution. This suggestion was accepted, and African Parks is now working on a strategy together with "Invisible Children" to establish a well-organized local transhumance corridor from the old village of Mapé to Bakouma.

All these measures have been, and will continue to be, implemented without gender discrimination, and respecting the cultural customs of the parties concerned.

2.3.11 Anti-Discrimination Assurance (G3.7)

African Parks has an excellent reputation, do not participate in, and are not complicit in any form of discrimination or sexual harassment. They have policies in place that aim to provide a workplace that is free of sexual harassment, and where employees respect one another's integrity, dignity, privacy and right to equity in the workplace.

The participation of the community in the project has been inclusive, in respect to individual and gender-independent capacities, cultural identity and religion. African Parks has a strict human resources (HR) policy that follows CAR labour laws and international standards. All recruitment processes are transparent, and the procedures are non-discriminatory, and based on merit.

2.3.12 Feedback and Grievance Redress Procedure (G3.8)

During the stakeholder engagement process, a feedback and grievance redress procedure was discussed. Together with the attendees, a mechanism or communication channel between African Parks and the stakeholders was established to resolve any questions or file any complaints that may result from the project implementation. The feedback and grievance redress procedure will have three stages, with reasonable time limits for each of the following stages.

First, the project proponent shall attempt to amicably resolve all grievances and provide a written or verbal response to the grievances in a manner that is culturally appropriate. Any verbal responses must be documented. African Parks will attempt to resolve all reasonable grievances raised and provide a written response to grievances within 30 days.

Second, any grievances that are not resolved by amicable negotiations shall be referred to mediation by a neutral third party. If grievances are referred to a third party, African Parks will do everything possible to ensure that all necessary resources are available to resolve the issue within 30 days of the third party being involved.

Third, any grievances that are not resolved through mediation shall be referred either to a) arbitration, to the extent allowed by the laws of the relevant jurisdiction, or b) competent courts in the relevant jurisdiction, without prejudice to a party's ability to submit the grievance to a competent supranational adjudicatory body, if any. Again, African Parks will provide all necessary resources to ensure that if any grievance reaches this stage of the procedure, it can be resolved as quickly as the relevant jurisdiction allows.

In addition, the Human Rights Grievance Mechanism of African Parks allows for the reporting of, and response to, accusations of human rights abuses related to park management activities. The mechanism is designed to:

- address potential breaches or violations of African Parks' Human Rights policies and procedures, including all law enforcement activities;
- ensure compliance with the African Parks Human Rights standards as set forth in the Code of Conduct and Statement of Principles document;
- be accessible to all stakeholders;
- keep complainants well-informed of progress of cases brought forward;

- and maintain records on all cases and issues brought forward for review.

2.3.13 Accessibility of the Feedback and Grievance Redress Procedure (G3.8)

The feedback and grievance redress procedure has been publicised and made accessible to communities and other stakeholders. Because of the high levels of illiteracy within local communities, the grievance procedure has also been explained to local community members orally through workshops and engagement sessions. Community members are also aware that if they have any grievances, they are able to raise them with eco-monitors or other members of the African Parks staff involved with community engagement and outreach. These staff members will then be able to assist with lodging an official grievance. All grievances that are raised, as well as the project responses, including any redress, will be documented and made publicly available. Communities will also be updated on the outcomes of any grievances, in person, through community meetings.

2.3.14 Worker Training (G3.9)

African Parks has extensive experience in conservation and community development projects. Many of the project activities have been designed to transfer knowledge to local communities through workshops and the direct activities. The CCA is also the largest employer in the region and aims to protect labour rights and promote safe and secure working environments for all workers.

The project has, and will continue to, employ people from the surrounding communities. These roles include rangers, eco-monitors, transhumance monitors, and control room operators, among others. African Parks has a Training and Development Policy which aims to develop workers' competencies and build institutional capacity to levels that foster achievement of high-performance standards, and fulfilment of the project objectives.

The project has been using the orientation and training guidelines developed for the African Parks Network, establishing a set of rules and conducts around the AP in general, until present but the CCA is now finalizing a training and personal career system specifically for the project.

Effective management requires competent and motivated employees. Career planning and competence building activities are needed to develop and maintain a high-performance workforce by providing targeted opportunities for learning and growth. AP's culture promotes individuals owning their careers. Career planning allows employees to align their annual development objectives with long-term career objectives and organizational needs.

African Parks has a Capacity Development Planning Policy aims to develop employee's competencies and build institutional capacity to levels that foster achievement of high-performance standards and fulfilment of objectives. All the competence needs are analysed in line with the organisation's strategic priorities for each business unit and compiled into an annual Capacity Development Plan including the relevant costs that need to be provided for in the annual budget.

African Parks has a comprehensive manual detailing the Standard Operating Procedures and Best Practice Guidelines that are followed for training of staff that are involved in law enforcement activities. These guidelines were developed together with subject matter experts and industry professionals both within the African Parks Network, and the wider community.

Everyone employed in roles that involve law enforcement activities are also required to meet a number of minimum standards referred to as basic qualification standards as well as taught a programme on Human Rights for Conservation Law Enforcement. Finally, African Parks also offers specialist training courses that offer unique skills that are needed by certain elements within the law enforcement teams.

More details available in the HR SOP and Law Enforcement SOP

2.3.15 Community Employment Opportunities (G3.10)

The project ensures that all individuals are given an equal opportunity to fill any employment positions (including management) if the job requirements are met, and that benefits reach women and the most vulnerable and/or marginalised people in the community, without any discrimination of age, sex, marital status, ethnicity, social status, religious convictions, political ideas, and/or sexual orientation.

The project has several activities planned that will provide employment opportunities for community members. These include positions as:

- rangers
- eco-monitors
- transhumant monitors

There will also be opportunities for local people to assist with the monitoring of the project activities through activities such as soil carbon sampling. Training will be provided or developed wherever necessary.

All candidates for positions will be selected for appointment based on merit according to their abilities, qualifications and competencies, with the aim of selecting the best person possible for the job. African Parks is an Equal Opportunity Employer (EOE) and thus aims to eliminate all forms of unfair discrimination such as race, ethnicity, or gender, in the recruitment and selection of staff. African Parks also has an HR policy that states it is committed to sourcing talent in the countries where they operate.

Other types of temporary employment are also provided by African Parks. These include short-term jobs as porters and/or guides to take part in surveys, research and monitoring, or demarcation and zoning missions. Other temporary work opportunities involve the clearing of fields, digging sand, loading and unloading of vehicles, and assisting with river transportation between towns.

2.3.16 Relevant Laws and Regulations Related to Worker's Rights (G3.11)

According to Article 9 of the Central African Republic Constitution "All workers participate to determine working conditions through their representatives. Laws establish mandatory assistance and protection to workers who suffer from health problems due to their working conditions." Moreover, according to Article 9: "The Republic guarantees all citizens the right to work in a healthy environment, rest and satisfaction of their needs (...). It guarantees citizens conditions favourable to their personal development, through an efficient employment policy. All citizens of the country shall be equal before the law. No one may be prejudiced in his/her employment based on his/her origin, gender, opinion or belief. Laws establish assistance and protection conditions granted to workers, especially the younger, older, disabled and those who have health problems due to their working conditions."

The main regulations protecting workers rights in the CAR are as follows:

- Law no. 09-004 of January 29, 2009 establishing the Labour Code of the Central African Republic
- Law no. 06.035 of December 28, 2006 on the Social Security Code
- Decree no. 09-116 of April 27, 2009 fixing the methods of application of law no. 06-035 on the Social Security Code.
- Order no. 005 / MFPTSSFP / CAF / DGTEFP of July 11, 1994, establishing and functioning of the Health and Safety Committees in the Central African Republic.

The project meets all the relevant laws and regulations covering workers' right in the CAR. African Parks has a strict HR policy and Standard Operating Procedure that meet international best standards.²⁵ The HR policies and standard operating procedures apply to all employees. African Parks has further developed an HR Policy aligned for the CCA which ensures that the project aligns with the local context in relation to local law and operational needs. All workers are informed of their rights and responsibilities during their training sessions.

The project also has an onboarding procedure that is used to inform works about their rights. Once a new hire has been selected this will be followed by on-boarding and induction programmes that will be completed during a probationary period prior to him/her joining the organisation full time, after a final probation review.

Each employee should act with integrity and apply the code of conduct. This requires, among other things, being forthright, non-discriminatory, honest, candid and accountable. AP employees are committed to treating everybody with dignity and respect regardless of level or circumstance. AP is committed to providing equal employment and advancement opportunities for all individuals without discrimination based upon an individual's race, colour, gender, religious creed, or any other characteristic protected by law. Employees are evaluated on merit and on the basis of their performance and will be provided with honest and fair feedback in this regard.

2.3.17 Occupational Safety Assessment (G3.12)

All project employees are required to receive training before they take up their roles in the project. The training is designed to inform workers of any potential risks they might face, and how to reduce them. For example, all rangers receive extensive training on the use of firearms to ensure that risks are minimised. African Parks has a strict HR policy that covers workers' safety and meets international best standards. All these procedures are followed in the context of this project.

African Parks also recognises that many of its employees work in challenging and often dangerous conditions and is committed to mitigating these risks. African Parks provides adequate relief using insurance in the event of an incident. Employees qualify for these benefits, based on their employment contract types. These are described in more detail below.

All members of African Parks and their project management units are covered with Group Life Insurance, irrespective of any local insurance policy cover, for up to a maximum of six times their annual earnings for death or total permanent disability in the event of an accident or from natural causes, subject to the conditions of the policy. Premiums are paid by African Parks Network at no cost to the employee.

²⁵ Supporting information: [2. General Human Resources Manual]

Employees based in parks, who are local and not part of the project management unit, are covered by group personal accident insurance at no cost to the employee. Staff are also covered for emergency evacuation and hospital insurance.

2.4 Management Capacity

2.4.1 Project Governance Structures (G4.1)

African Parks is a non-profit conservation organisation that takes on the complete responsibility for the rehabilitation and long-term management of national parks in partnership with governments and local communities. African Parks is the project proponent and will be in charge of implementing the project activities. Below are the current organigram of African Parks representations in CAR.

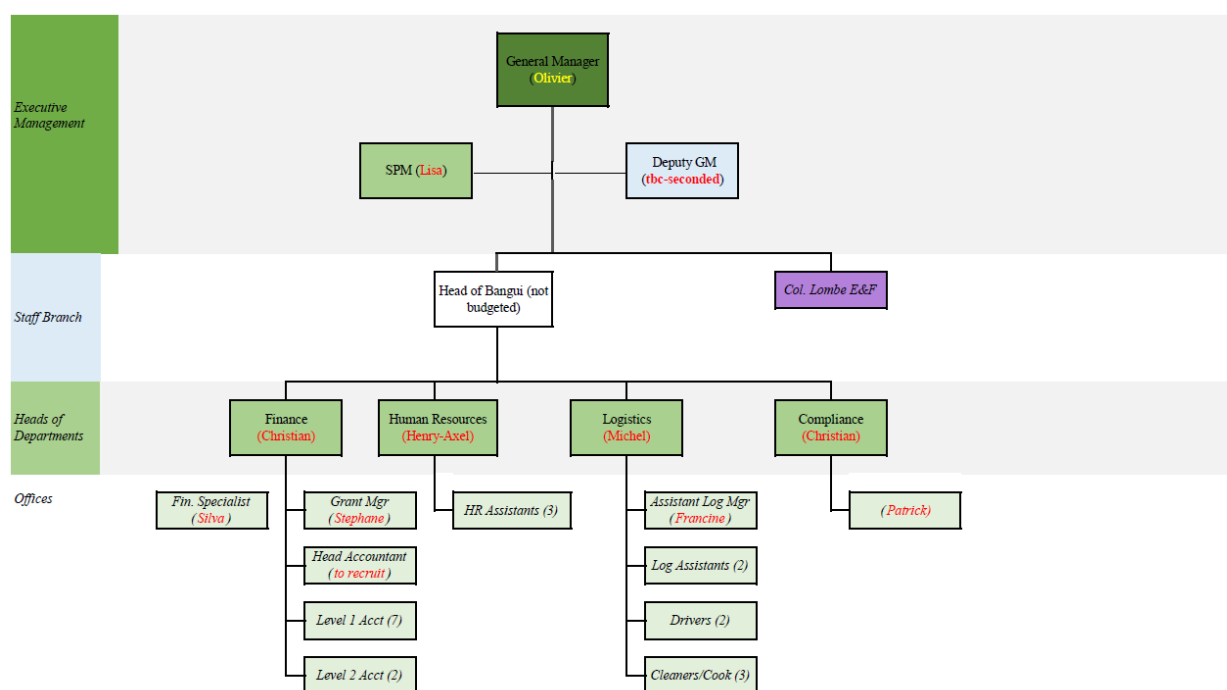


Figure 7: Bangui representation



Between AP, the project partners and their advisors, the project possesses all of the following skills:

- Excellent knowledge of carbon accounting and carbon markets
- Ability to manage the geographical information system and databases to generate all required cartographic analysis
- Ability to train plot samplers
- Experience in the VCS and CCB standards
- Attention to detail

- Understanding of Monitoring, Reporting, and Verification (MRV) requirements.
- Background in monitoring and research.
- Knowledge in sampling methods of wildlife and ecosystem assessment using quality indicators.
- Knowledge in anti-poaching control and sustainable agriculture activities.
- Experience in working with the community and environmental education.

- Strong knowledge of REDD+ projects.
- Experience in sustainable practices for local and rural development, conservation and management of biodiversity and ecosystem services.
- Experience of African conservation projects.
- Knowledge in planning, execution and control of administrative and financial resources.
- Experience and skills in managing resources from donors or co-operators.
- Good leadership skills

2.4.3 Management Team Experience (G4.2)

African Parks pioneered the public-private partnership model for protected area management, whereby African Parks maintains the full responsibility and execution of all management functions. This is achieved through three approaches: long-term agreements; putting in place funding solutions; and establishing good governance and management by creating separate legal entities registered in the country, with a Board representing key stakeholders.

The project is managed and operated from the project headquarters, which have been given the mandate by the project proponent (African Parks) to administer carbon proceeds and develop management strategies, collaborate with the operation partners on the ground and oversee general implementation of project activities and project operations on behalf of the project partners.

The management team must ensure land management and carbon activities are implemented. The main responsibilities of the management team are to:

- ensure the principles of good governance
- coordinate contact with partners
- monitor the implementation of activities at different scales in the field
- monitor the personnel file
- produce annual reports
- organise meetings with the organisation and village communities
- ensure activities for anti-poaching control and sustainable agriculture

Other entities involved in the project

South Pole Carbon Asset Management Ltd has a long and successful track record working on forestry-based carbon projects, including the first forestry VCS project that issued credits in Latin America, and the largest REDD+ project in extension in Zimbabwe.

South Pole contributed throughout to the PD and will support the monitoring and verification processes of the climate, community, and biodiversity benefits, and will document any complaints and claims through the mechanism defined by the project participants. In addition, South Pole will support validation and verification under the VCS/CCB standard by meeting with the auditor, responding to corrective actions, and performing project registration and any clarifications requested by controls.

South Pole is a global sustainability service provider, dedicated to working with clients in the public and private sectors to deliver solutions that help create more sustainable societies and economies. Its vision is to positively impact the climate and ecosystems and communities. South Pole's team of over 350 experts across 18 offices around the world focuses on key sustainability issues such as climate change, renewable energy, forestry and land-use, water, and sustainable cities and buildings.

Over 14 years, South Pole has, together with its clients, achieved the following results:

- Prevented 170 million tonnes of CO₂ emissions
- Developed more than 700 projects across the renewable energy, forestry, agricultural, industrial, household, and public sectors
- Protected or restored more than 2 million hectares (ha) of land, and
- Created 100,000 jobs in developing countries.

South Pole has a technical and professional team that combines extensive knowledge in GHG emission reduction certification for forestry and land-use projects and VMR systems, enabling them to

comprehensively address all aspects of the project. More information on South Pole can be found at <https://www.southpole.com>

2.4.4 Project Management Partnerships/Team Development (G4.2)

The project team is suitably qualified for the project implementation (see section 2.4.3).

2.4.5 Financial Health of Implementing Organization(s) (G4.3)

The financial factor and the project autonomy to get its own resources is one of the most significant challenges for the project development. However, African Parks has adopted financial mechanisms to provide an adequate actual and projected cashflow for the project implementation, in order to achieve the objectives.

During the first years of the project lifetime, Chinko covered around 70% of its expenditures using the revenue from the activities and funds obtained from donor organisations and used an endowment fund to cover the rest. For the next years, in the short- and medium-term (2021 – 2030 period) the project has secured, around 27% of the funds required without the projected revenues from selling verified carbon units (VCUs). It is expected that the carbon credits would provide significant resources to continue the development of the project activities.

One of the strategies to ensure adequate financial support over the project lifetime is the signing of emission reduction purchase agreements (ERPAs) with buyers willing to obtain credits from the project for various years, in order to guarantee an income for the implementation of the activities.

2.4.6 Avoidance of Corruption and Other Unethical Behavior (G4.3)

African Parks has a strict Code of Conduct that the organisation and its employees are obliged to follow. The Code of Conduct forms part of African Parks' Humane Resources Policy and Standard Operating Procedures.²⁶ All employees must comply with all applicable laws and regulations which relate to activities for and on behalf of African Parks and not seek to gain advantage through illegal or unethical business practices.

The code of conduct covers:

- Human Rights
- Fair Dealing
- Conflict of Interests
- Gifts, Payments and Commissions
- Public Disclosures
- Protection and Proper Use of AP Assets
- Relationships with Clients, Customers and/or Visitors
- Fraud and Corruption

All employees are required to respect, protect and uphold the human rights of all persons with whom they come into contact in their professional capacity as a representative of the CCA and of African Parks. Specifically, all law enforcement personnel must always ensure that they protect the human rights and

²⁶ Supporting information: [2. General Human Resources Manual]

wellbeing of suspects in custody, never torture, observe best practice law enforcement techniques for suspect interviewing, and facilitate best practice judicial processes.

Any material transaction or relationship that could reasonably be viewed to give rise, or potentially give rise, to a conflict of interest must be discussed with an immediate supervisor/manager before the transaction proceeds to the point that a conflict of interest may be inferred.

The code of conduct defines fraud and corruption as “the acceptance of bribes, receiving of money, goods or services which are not disclosed to the organisation and through which one person gains a dishonest advantage over another”. African Parks consider these as serious offences which can result in criminal proceedings.

Fraud and corruption, or attempted fraud and corruption, are breaches of the acceptable standards of conduct required of employees and will not be condoned by the project. Disciplinary action will be taken against offenders, whether or not a loss has been suffered by the organisation. Employees found guilty of fraud and corruption will be dismissed and may be reported to the police should the evidence justify such action.

South Pole, as the supporting organisation, is also committed against these practices. The company has several policies in place such as a anti-corruption policy, an ethics policy and process, a code of conduct (also for third parties), among others. These documents show South Pole’s commitment to conduct business with full integrity.

2.4.7 Commercially Sensitive Information (Rules 3.5.13 – 3.5.14)

No commercially sensitive information has been excluded from the public version of the project description.

2.5 Legal Status and Property Rights

2.5.1 Statutory and Customary Property Rights (G5.1)

The Constitution of the Central African Republic provides that all persons have a right to property, and the state and citizens have an obligation to protect those rights. In the case of this project, the project area is considered uninhabited, although there are communities that live in the surrounding areas. For more details on the relevant laws and types of land tenure in the CAR (see section 2.5.7). It should also be noted that transhumant pastoralism is a common practice in the region, which has undefined property rights under the CAR law.

Under the national laws of the CAR, protected areas are the property of the state. There is a public-private partnership agreement in place between the national government and AP, which gives AP the authority to fully manage operations of the project area. All protected areas in the CAR are influenced by laws that include the involvement of communities in conservation projects. Law No 08.022 in the Forestry Code of CAR establishes the integration of indigenous peoples into the management of protected areas, including the recognition of customary rights of use, consultation in the event of exploitation, the implementation of community forests, and participatory management in decisions concerning the protection of ecosystems.

As stated, the project area is considered uninhabited, but there are community groups living in the surrounding landscape which do rely on the extraction of resources from the project area.

CAR’s 2006 Water Code recognises the existence of ‘sacred waters’ and ensures their protection by community leaders. The CAR’s Forest Code also recognises customary rights to forest resources, granting local communities use-rights to forest land and forest products. All use-rights recognised by the formal law

are subject to state definition and control. Finally, the CAR government recognises use-rights to land based on the principles of customary law.

The Chinko Project has established three zones with different management regimes in the region; a core protected area; a buffer zone, where extraction activities are limited and managed; and a transition zone surrounding the buffer zone, where communities are able to access resources.

2.5.2 Recognition of Property Rights (G5.1)

At present, the project area is uninhabited and only has limited road access. There are, however, local communities living in the surrounding area which rely on the natural resources within the protected area for their livelihoods. As mentioned in section 2.5.1, protected areas are property of the state. African Parks has signed an agreement to manage the project area under a public-private partnership.

2.5.3 Free, Prior and Informed Consent (G5.2)

The project area is considered to be uninhabited, but the project has conducted stakeholder engagements with local communities living on the periphery of the project to inform them about the project and explain that the project will in no way encroach on private or community property. See section 2.3 for more details on this process.

African Parks subscribes to the guiding principles for Free, Prior and Informed Consent. They have a strict policy that ensures that the following decision-making processes are taken into account during the development of a project:

- free from coercion, intimidation or manipulation.
- prior to allocation of land for particular uses or approval of specific projects. Lead time should reflect respect for time requirements of indigenous consultation/consensus processes
- informed at a minimum, and based on full available information, about the nature and scope of any proposed project or activity, including:
 - areas that will be affected
 - potential economic, social, cultural and environmental risks and benefits
 - type of law enforcement work and possible impact, and
 - timeframe of the proposed project and organizations/actors likely to be involved

Information should be in a language easily understood by the affected people, delivered in a culturally appropriate way, and available from independent sources. Communities may also require capacity building on unfamiliar issues to be truly informed.

- Consent requires time and an effective system for communicating among all affected community members and taking decisions through customary or other community-defined decision-making processes. It requires that affected people are able to say yes or no at each stage of the project. Consent is to be given or withheld by the community as a whole; no single individual or representative can make the decision. Consent should result in equitable agreements and should be part of ongoing processes of communication and negotiation, rather than a one-off action.

2.5.4 Property Rights Protection (G5.3)

Demonstrate that project activities do not lead to involuntary removal or relocation of property rights holders from their lands or territories, and does not force rights holders to relocate activities important to their culture or livelihood.

If any relocation of habitation or activities is undertaken within the terms of an agreement, demonstrate that the agreement was made with the free, prior, and informed consent of those concerned and includes provisions for just and fair compensation.

Project activities will not at any time lead to the involuntary removal or relocation of land ownership rights and do not oblige communities associated with the project area to relocate activities important to their culture or livelihood.

2.5.5 Illegal Activity Identification (G5.4)

The region in which the project area is located is characterised by insecurity, often perpetuated by the activities of foreign armed groups. The impacts of the activities of these armed groups, as well as illicit cross-border movements, have resulted in instability in the region.

The main illegal activities that have been recognised, and could affect the project's activities, are poaching and illegal wildlife trade. In Chinko, poachers have been identified as originating from Bakouma and Rafai. Non-local poachers also come from Bangassou, Bria and Gambo. Poaching is an important source of income for all communities living around the reserve, and most offtake is sold to local buyers (see section 2.1.6 for more information on the important livelihood activities in the region). Most of this poaching takes place on a relatively small scale. Large-scale commercial poaching, however, is often carried out by armed groups and is highly organised. These groups engage in poaching for purely economic purposes. Poaching in the region has sometimes been shown to have been facilitated by the administrative authorities in the region. Local leaders and chiefs have been implicated in internal, but not cross-border trafficking, of high-value products (Ondoua Ondoua, G. et al, 2017).

Transhumance pastoralists have also been identified as posing a serious poaching problem in the project area. While they sell meat locally, high-value products such as ivory, skins, and other trophies are transported to larger towns and cities. The transhumant pastoralists are also actively involved in trafficking of wildlife, and of ivory and leopard skins in particular (Ondoua Ondoua, G. et al., 2017).

Armed groups operating in the region (e.g. the Seleka), have been recognised as actively supplying firearms, and using their vehicles to transport large quantities of bushmeat to neighbouring towns and cities, such as Bria and Yalinga, northwest of Chinko (Ondoua Ondoua, G. et al., 2017).

As well as bushmeat, traders sell ivory, and big cat skins, fat, teeth and claws. In CAR, the first points of sale for illegally procured wildlife products are the towns of Rafai and Zemio (Zemio also hosts 2,400 Congolese refugees who fled the Lord's Resistance Army (LRA) atrocities in the Democratic Republic of Congo (DRC) in 2009). Zemio is seemingly the largest trading centre for wildlife products in southeast CAR, notably for elephant meat and orphaned chimpanzees (Ondoua Ondoua, G. et al., 2017).

The project has a number of law enforcement initiatives that are designed to prevent illegal activities in the project area, as well as steps for reducing the reliance of local populations on illegal activities, such as the identification and implementation of alternative income-generating activities (see section 0 for more details on the project activities).

2.5.6 Ongoing Disputes (G5.5)

A number of disputes have been identified that have been resolved or are in the process of being resolved. African Parks is transparent with regards to all disputes that have been raised and has measures in place to ensure all disputes are resolved in a manner that benefits all parties.

The most recent dispute resolved was related to the closure of illegal mines in the southwestern part of the project area. Since 2014, there have been three main regions where illegal gold and diamond mines have been established. Because mining is illegal in the project area under the CAR law, two out of the three were closed between 2015-2016. The last illegal mining region in the southwestern part of the project area, however, was socio-economically much more important for the local communities. As a result, the project was hesitant to shut down the illegal mines without a new opportunity for the community. The project engaged with affected communities, miners, and government representatives over a two-year period, in order to establish the best way to relocate these mines, and create responsibly managed official mines in the buffer zones that were established. The process was successful, and the last illegal mine in the project area was peacefully closed on 26 November, 2020.

Another dispute took place along the northwestern boundary of the Chinko reserve. The reserve was initially established with four hunting zones. When African Parks took over management of the Chinko, they started to manage the road network and campsites that had been established and used by a hunting company called CAWA from 2006 to 2014. An area on the western side of the Mbari River had been used by CAWA for official and legal trophy hunting but was actually outside the Mbari-39 hunting zone and officially in the community zone of Yalinga. African Parks had been managing this area from 2015-2020 as protected land, as there was a 10 km² area of forest that was an important hiding place for the last elephants in Eastern CAR.

In 2020, the project invited a delegation from Yalinga village (which was previously inaccessible due to security issues in the rebel-controlled zone) to Bangassou where the dispute was discussed. A strategy was developed to create an official buffer zone between Yalinga and the project area where the community has access to the natural resources. African Parks will assist the community in managing the zone and using the resources in a sustainable way. The goal is to create two different sectors. Sector I will be for sustainable hunting, fishing and responsible mining while Sector II is for strict protection. In the future, Sector II could become an ecotourist destination or trophy hunting zone, with the revenue going to the community of Yalinga.

The final dispute was around the Dembia-49 hunting zone, which was assigned to the management of African Parks, after the agreement with the CAR government was signed on 15 April, 2020. This hunting zone includes villages and is close to a public road. The goal for this area is to split the hunting zone into two sectors; one strictly protected and fully managed by African Parks, and a second defined as a buffer zone managed by the local communities, with assistance from the project and the government. This process is ongoing, and the first meetings with the affected communities have been held.

It should also be noted that there are often minor disputes between local communities and the project's law enforcement team around the issue of poaching in the project area. Communities around the project area are, however, supportive of the project with most agreeing that the stability in the region is a direct result of the project activities. One of these projects is to improve communities' access to natural resources. In the mid- to long-term, the active management of the project area and particularly the buffer zones should allow hunters and fishermen to find more and higher quality resources in closer proximity to their villages. The project is finalising a comprehensive land-use plan with the participation of local communities that will propose the new zonation of the area and will be officially submitted to the government.

2.5.7 National and Local Laws (G5.6)

There are a number of national and local laws that are relevant to project activities. These are described in detail below and cover the climate, land, water, forest, and minerals sectors. The project is in compliance with all the laws described below and aligns with all national climate strategy documents.

The CCA is uninhabited and classified as a protected area. African Parks has signed an agreement with the government to take responsibility for managing the protected area and assisting in enforcing the law of CAR with regards to the protected area. In order to achieve success in this regard, African Parks has recruited, trained and equipped a sufficient number of rangers, eco-monitors and transhumant officers to effectively manage the CCA and enforce the national laws in the area.

Communities on the periphery of the project area that have access rights to the natural resources in the CCA will in no way be prevented from accessing these natural resources. An important component of the project is to ensure that local communities have access to the natural resources on which they rely. The project has, and will continue to, establish buffer zones that are managed together with communities. The sustainable use of natural resources is allowed (and encouraged) in these buffer zones.

Climate

In terms of response to climate change, the CAR ratified the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol in 1995 and 2008 respectively. The country also developed a number of documents that provide strategic policy guidance in the implementation of the Convention. These include:

- the national adaptation programme of action (NAPA) in 2007
- the first- and second-generation Poverty Reduction Strategy (PRSP I and 2) for the period 2007-2011 and 2012-2016 respectively
- the Environmental Code in 2007
- the national programme to combat desertification and land resource degradation in 2009
- the Environmental Policy in 2011
- the preparatory document for the REDD + strategy and its implementation through the Measurement
- reporting and Verification (MRV) project
- the second national communication in 2013 on the assessment of emissions by sector; and
- the Intended Nationally Determined Contribution (INDC) in September 2015, which includes an adaptation component

The CAR has neither developed its National Adaptation strategy nor its Nationally Appropriate Mitigation Actions (NAMA). It is expected that the NAMA's agenda will be developed with funding from the African Climate Change Fund (ACCF) and its national adaptation strategy will be developed with financing from the World Bank.²⁷

Land

The 2004 Constitution of the Central African Republic states that all persons have a right to property, and the state and citizens have an obligation to protect those rights. CAR's Law No. 63 of 1964 is the primary

²⁷ <https://www.greenclimate.fund/sites/default/files/document/readiness-proposals-central-african-republic-undp-nda-strengthening-and-country-programming.pdf>

formal law governing land rights in CAR. Law No. 63 recognizes customary law but limits customary land tenure to use-rights.²⁸

Several land tenure types exist in CAR, including private ownership, concessions, and customary tenure. These are discussed in more detail in the following paragraphs.

Under CAR's formal law, an individual or entity can obtain ownership rights to land through registration of their interest as private property. Occupants of land can apply for ownership rights under the principle of *mise en valeur*, which awards ownership rights to those who develop their land intensively (e.g. by means of intensive or permanent agriculture). Ownership rights may be transferred by purchase, inheritance and lease. Less than 0.1% of land in the CAR is registered.

Individuals, groups, and entities can lease land from the state or private parties under formal law and customary law. Leases of land within the state's public domain are granted for definite periods, generally not exceeding 20 years; no lease can extend beyond 50 years.

The state can also grant concessions of land to individuals and entities as concessions. The concessionaire must develop the land in accordance with the terms of the concession within two years for urban land and within five years for rural land. Concessionaires who have developed the land in accordance with the agreement and obtained the approval of the local government may apply for private ownership rights to the land.

The state's recognition of occupancy rights to certain land has continued despite the absence of formal law providing for rights of habitation. Upon application, the state issues a habitation permit that allows the applicant to occupy the land and erect any non-permanent structure, including huts of organic materials. In some areas the permits are free and easily obtained. In peri-urban areas, permits are difficult to obtain and often require large payments and the permission of multiple officials. The length of time for which habitation permits are granted is unknown.

Law No. 63 of 1964 recognises use-rights to land based on principles of customary law. Customary law is a localised and evolving system, and no comprehensive studies have been published detailing the nature of the system as it is operating in CAR. Some general principles of customary law that are common to the central African region are thought to apply in the CAR, such as land being held collectively through lineage and the right of a first clearer of land to use the land. As the commercial value of land has increased, customary landholdings have become increasingly individualised and passed by inheritance within families.²⁹

Water

The Ministry of Water, Forestry, Hunting and Fisheries has authority over the country's water resources. The Ministry of Agriculture and Livestock has authority over irrigation water and systems, and the Ministry of Public Works is responsible for urban water supplies and systems.³⁰

CAR's 2006 Water Code states that all of the country's surface and subterranean water is in the public domain. No one can prevent the free movement of the country's surface and groundwater, and any use of the water must be authorized by the government. The Water Code does not expressly recognize customary

²⁸ <https://land-links.org/country-profile/central-african-republic/#summary>

²⁹ Ibid.

³⁰ USAID, 2010. Property Rights and Resource Governance Country Profile: Central African Republic

water rights (ARD 2007a). The Water Code does, however, recognize the existence of “sacred waters” and ensures their protection by community leaders.³¹

Forests

The Ministry of Water, Forests, Hunting and Fisheries (MEFCP) is responsible for the management of the country's forests. The CAR has several laws and regulations pertaining to forest management, wood harvesting, processing and trade.

The Central African Forest Code was passed in October 2008 (Law No 08.022) and is the main legal text governing the forest sector in CAR. The Forest Code provides for state ownership of the country's forests and divides the forests into the permanent forest domain and non-permanent forest domain. The country's permanent forests are located in Bangassou in the eastern part of the country and the southwest forest system. Non-permanent forests are those created by local governments, individuals, and groups through arboriculture and forest restoration activities.³² The Forest Code also provides the authority for the licensing of traditional timber production and community forests. Concessionaires, on the other hand, must hold a Forest Management Permit (Article 32, Forest Code). The Forest Code recognises customary rights to forest resources, granting local communities use-rights to forest land and forest products. All use-rights recognised by the formal law are subject to state definition and control.³³

The Yaoundé Declaration of 1999, which was signed by CAR, Cameroon, Chad, Democratic Republic of Congo, Republic of Congo, Equatorial Guinea, and Gabon, established an international framework for collaboration on cross-border forest issues, the creation of protected areas, and the development and implementation of coordinated sustainable forest management. The declaration also created a governance structure, the Central African Forests Commission (COMIFAC), which has the authority to direct, coordinate and monitor forest and environmental policies in the region.³⁴

Minerals

The Ministry of Mining and Energy is responsible for the mineral sector. Production of diamonds and gold is overseen by the Bureau of the Evaluation and Control of Diamonds and Gold (Bureau d'Evaluation et de Control de Diamant et d'Or - BEDCOR), which maintains a database of production.³⁵

The 2009 Mining Code governs all mining activities in CAR. Article 6 of the Mining Code provides that all mineral resources are the property of the state. Entities and individuals can obtain rights to CAR's minerals, and rights to minerals are separate and distinct from rights to land. The Mining Code recognizes customary property rights and requires license holders to compensate holders of customary rights for damage to land or loss of land-use resulting from mining operations.³⁶

³¹ <https://land-links.org/country-profile/central-african-republic/#summary>

³² USAID, 2010. Property Rights and Resource Governance Country Profile: Central African Republic

³³ Ibid.

³⁴ Usongo and Nagahuedi, 2008. Participatory land-use planning for priority landscapes of the Congo Basin.

³⁵ Bermudez-Lugo, 2006. The Mineral Industries of Central African Republic, Côte d'Ivoire, and Togo.

³⁶ USAID, 2010. Property Rights and Resource Governance Country Profile: Central African Republic

2.5.8 Approvals (G5.7)

The current project accounting areas are established in uninhabited hunting zones granted by CAR government on a recently signed 25-year partnership.

2.5.9 Project Ownership (G5.8)

Considering that the project is a grouped one, African Parks possess control of the current project accounting areas. In June of 2014 Chinko signed a 50-year agreement with the Ministry of Forest Economy, Environment and Tourism in representation of the Government of the Central African Republic for the management of the hunting zones N° 39, 40, 41 and 48 (which is the area of the first instance of the project).³⁷ This agreement was later superseded by a 25-year agreement, signed in April of 2020, for the management of the initially included hunting zones as well as N° 17, 32, 34, 35, 36, 38 and 49.³⁸ The agreement gives the possibility to further increase the protected area and it is therefore that a grouped project was considered, where new instances will be added once the legal agreement is established.

2.5.10 Management of Double Counting Risk (G5.9)

The emissions reduction as a result of this project are not intended to be used under any other trading programme or mechanism. The current project is entirely independent of any other carbon project or programme scheme being developed in the country; therefore, no double counting has occurred, and it is not intended to occur.

2.5.11 Emissions Trading Programs and Other Binding Limits

The emissions reductions as a result of this project will not be used for compliance under any other trading program or mechanism.

2.5.12 Other Forms of Environmental Credit

The project has not sought nor received any other form of GHG-related environmental credit.

2.5.13 Participation under Other GHG Programs

The project has not been registered nor is seeking registration under any other GHG program.

2.5.14 Projects Rejected by Other GHG Programs

The project has not been rejected by any other GHG program

2.5.15 Double Counting (G5.9)

Any credit issued by VERRA will have a unique identifier to avoid double counting.

³⁷ Supporting information: [2. General\Project Ownership\2014_Chinko 50year agreement]

³⁸ Supporting information: [2. General\Project Ownership\2020_Chinko 25year agreement]

3 CLIMATE

3.1 Application of Methodology

3.1.1 Title and Reference of Methodology

Methodology applied:

VM009 Methodology for Avoided Ecosystem Conversion, v 3.0

Tools applied:

- VT0001 Tool for the Demonstration and Assessment of Additionality in VCS AFOLU Project Activities, v 3.0
- VCS AFOLU Non-permanence Risk Tool, v 4.0

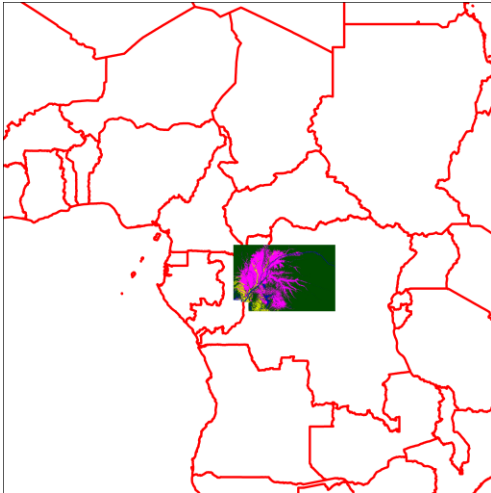
3.1.2 Applicability of Methodology

Below is a description of each applicability condition, a statement of whether it applies to the project and a justification.

Table 5: Applicability conditions

Applicability conditions	Justification
1) The drivers and agents of conversion in the baseline scenario must be consistent with those described in section 6 of the methodology VM0009, and the end land use in the baseline scenario is non-forest (in the case of REDD project activities) or converted native grassland (in the case of ACoGS project activities). Accordingly, the project activity must be APD or AUDD for forested project accounting areas and APC or AUC for grassland project accounting areas.	The methodology is applicable because the baseline scenario is consistent with those described in section 6 of the methodology (see section 3.1.4), the land use in the baseline scenario is a non-forest state. The project activity is a AUDD (see section Identifying Baselines types).
2) All project accounting areas must have been in an unconverted state (i.e. forest or native grassland) for at least 10 years prior to the project start date, according to the following: a) land in all forested project accounting areas has qualified as forest, on average, across the project accounting areas, as defined by the Food and Agriculture Organization (FAO) 2010 or by the residing designated national authority for the project country for a minimum of 10 years prior to the project start date; and b) land in all grassland project accounting areas has qualified as native grassland or shrubland	All land in the PAAs has been in an unconverted state for at least 10 years prior to the project start date, see section Delineating Project Accounting Areas for more details. Land in all forested PAAs has qualified as forest as defined by the national report of the forest resources assessment of the CAR in 2015: Land occupying an area of more than 0.5 hectares with trees reaching a height of more than five metres and tree cover of more than 10%.

Applicability conditions	Justification
for a minimum of 10 years prior to the project start date.	
3) For project accounting areas with an unplanned baseline type, a conversion threat must exist for each project accounting area as demonstrated by one of the following two options: a) imminent conversion (see definition) must be predicted by a survey, where more than 60% of respondents predict the end land use identified in the baseline scenario. The survey must meet the requirements of Appendix E of the Methodology VM0009; or b) as of the project start date, some point within 2 kilometres of the perimeter of the project accounting area has been converted to the end land use identified in the baseline scenario.	All the PAA in the project belong to the unplanned baseline type category and there is a conversion threat for each of them demonstrated by: b) As of the project start date, some point within 2 kilometres of the perimeter of the relevant PAA has been converted to the end land use identified in the baseline scenario, for more details see Annex 4 – Baseline definition.
4) In the case of baseline type F-U1, at least 25% of the project area boundary is within 120 meters of deforestation and at least 25% of the project area boundary is adjacent to the reference area (see section 6.3 of the methodology VM0009).	Not applicable, the project does not have any PAA with a baseline type F-U1.
5) In the case of baseline type G-U1, at least 25% of the project area boundary is adjacent to the reference area (see section 6.3 of the methodology VM0009).	Not applicable, the project does not have any PAA with a baseline type G-U1.
6) In the case of baseline type F-U2, at least 25% of the project area boundary is within 120 meters of deforestation (see section 6.3 of the methodology VM0009).	Not applicable, the project does not have any PAA with a baseline type F-U2.
7) The project accounting area(s) must not contain peat soil.	As shown by Dargie et al., (2017), nor the CAR nor the project accounting areas contain any peat soil.

Applicability conditions	Justification
	 Figure 9: Extend of the central Congo Basin peatland complex Source: (Dargie et al., 2017)
8) For each project accounting area, a reference area can be delineated for each baseline type in the baseline scenario that meets the requirements, including the minimum size requirement, of section 6.8.1 of this methodology.	A reference area was delineated following the requirements detailed in section 6.8.1 of the methodology. Refer to Delineating Reference Areas section for more details.
9) As of the project start date, historic imagery of the reference area(s) exists with sufficient coverage to meet the requirements of section 6.8.4 of the methodology.	As of the project start date, historic imagery of the reference areas exists with sufficient coverage to meet the requirement of section 6.8.4 of the methodology. See section Selecting historical imagery for more details.
10) Project activities are planned or implemented to mitigate ecosystem conversion by addressing the agents and drivers of conversion as described in section 8.3.1 of the methodology.	Several project activities are planned and implemented to mitigate ecosystem conversion by addressing the agents and drivers of conversion as described in section 8.3.1 of the methodology. See sections 0 and Leakage Mitigation Strategies for more details.
11) The project proponent has access to the activity-shifting leakage area(s) and proxy area(s) to implement monitoring (see sections 8.3.2.1 and 6.4) or has access to monitoring data from these areas for every monitoring event.	The project proponent has access to activity-shifting leakage areas and proxy areas, see section Spatial boundaries for more details.

Applicability conditions	Justification
12) If logging is included in the baseline scenario and a market leakage area is required as per section 8.3, then the project proponent has access to (or monitoring data from) the market leakage area if measurement is needed (see section 8.3.3 of the methodology VM0009).	Not applicable, logging not included.
13) This methodology is applicable to all geographies. However, if Soil organic carbon (SOC) is a selected carbon pool and the default value from section 6.19.2 is selected, then the project must be located in a tropical ecosystem.	SOC is selected, the project is located in different tropical ecosystems of CAR and therefore the default value from section 6.19.2 of the methodology is used.
14) If livestock is being grazed within the project area in the project scenario, there must be no manure management taking place, as emissions from N ₂ O as a result of manure management are not quantified or addressed in this methodology.	There will be no manure management in the project area as part of the project activities.
15) For ACoGS project types, project activities must not result in significant GHG emissions. All GHG emissions from project activities must be shown to be <i>de minimis</i> (see section 8.3.1 of the methodology).	Not applicable.

3.1.3 Project Boundary

Spatial boundaries

Below is a description of the spatial boundaries of the project considering the six types of areas used in the methodology, Figure 10 presents a map with the applicable boundaries.

Project area

The project area is encompassed by the zone d'intérêt cynégétique (ZIC) of Eastern Wilderness, as well as The Réserve de Faune de Zémongo and Yata-Ngaya and André Felix National Park. Currently African Parks does not have control of all of these areas, which is why the project is proposed as a grouped project, in which future instances will be added in subsequent verifications – once agreements with the government take place.

As per the methodology determination, grouped projects are allowed, where each project activity instance is treated as a project accounting area in a single project area. All project activity instances that are grouped must be in the same region and must each meet all the applicability conditions of this methodology, including applicability conditions related to the baseline scenario.

Project accounting areas

Considering the activities carried out by African Parks in the area and the current agreements with the government, the proponent at the moment of the validation has control of two areas, in order to simplify the calculation, there is a PAA for each instance.

Instance 1

The first instance of the REDD PAA is compassed by the forest cover present in the 39 (Mbari), 40 (Chinko), 41 (Vovodo Chinko) and 48 (Bas Chinko) ZICs.

Instance 2

The second instance of the REDD PAA is compassed by the forest cover present in #36 (Trois rivières), ZIC.

Reference area

The reference area of the project was selected according to the limitations of the Country boundary limits in the east with Sudan and in the south with Democratic Republic of the Congo. Next, a m.a.s.l threshold was created using the maximum and minimum heights present in the project area, and later the reference area was adjusted following the main roads and the agents and drivers of deforestation in the area.

Proxy areas

The proxy areas were selected considering three post deforestation scenarios, overgrazed areas, agricultural areas and mining sites. For more details see section Delineating Proxy Areas.

Activity-shifting leakage area

The activity-shifting leakage area was established per each instance. To select the activity-shifting leakage area, a 20km buffer was established at the border of each instance. This distance was selected considering the areas most likely to be used by the agents. These areas are at least as accessible, as the project area and have similar conditions in terms of topography and land cover. However, the project activities will aim to avoid any displacement of the deforestation and/or conversion, and instead will lead to a sustainable use of the natural conditions in the long-term. For more details see section Delineating the Activity-Shifting Leakage Area.

Market leakage area

As explained in section Determining Emissions from Market Leakage, the project does not account emissions from market leakage.

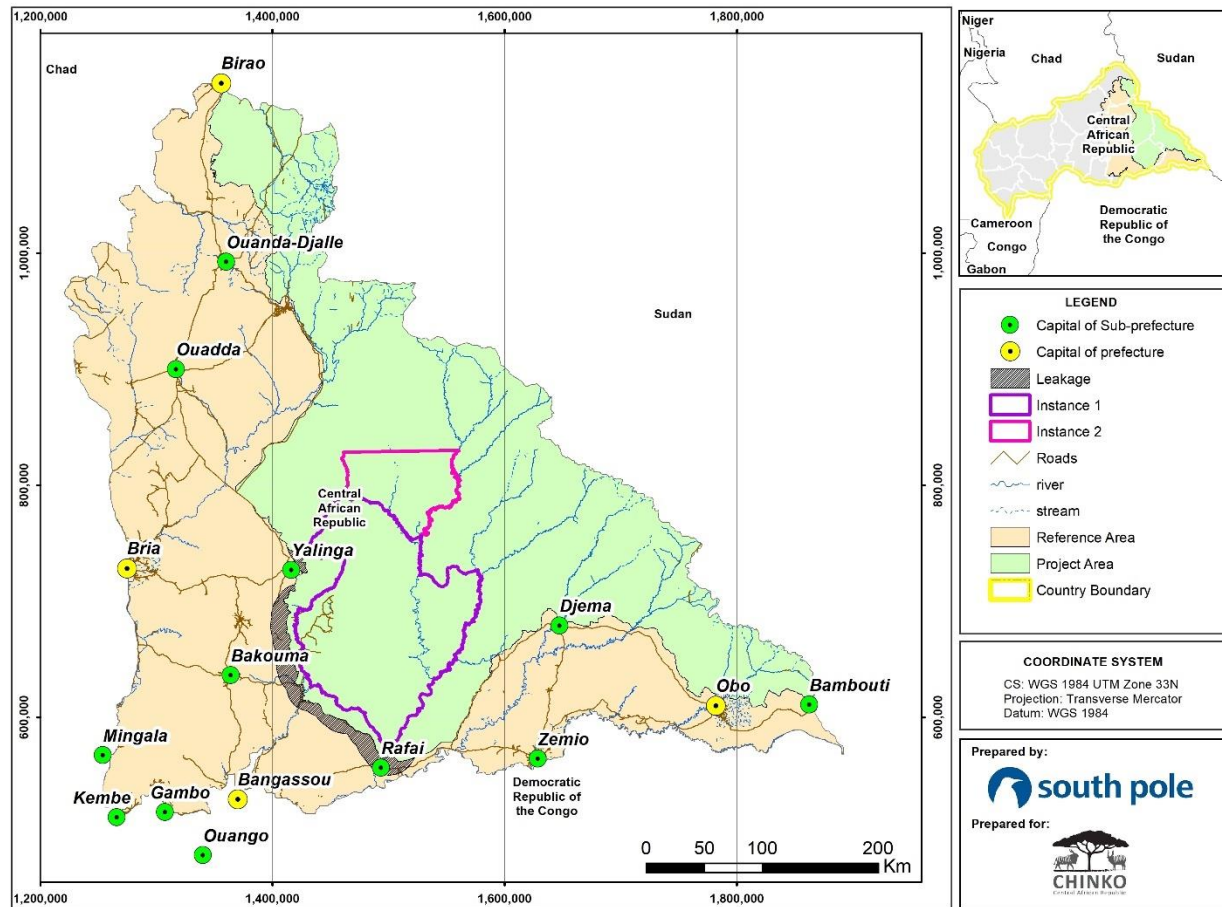


Figure 10: Spatial boundaries³⁹

Temporal boundaries

- **Project start date:**
 - **Instance 1:** 15 September 2016
 - **Instance 2:** 15 April 2020
- **Crediting period:** From 15 September 2016 to 14 April 2045. The length of the crediting period is 28 years, 7 months and 0 days.
- **Baseline re-evaluation:** As per VCS requirements, for the duration of the project it is necessary to reassess the baseline every 10 years. Then, the baseline re-evaluation will be performed during the first verification claiming credits from a monitoring period after 16 September 2026.
- **First anticipated monitoring period:** The first anticipated monitoring period will be from 15 September 2016 to 31 December 2020.

³⁹ Full-size map available in the supporting documentation

- **Anticipated subsequent monitoring periods:** The subsequent monitoring reports are anticipated in a three-year interval.⁴⁰

Gases and carbon pools

Table 6: Included GHG Sources

Gas	Baseline and project sources	Included?	Justification/Explanation
CO ₂ (carbon dioxide)	Flux in carbon pods	Yes	Major pool considered in the project scenario
CH ₄ (methane)	Burning of biomass	No	Conservatively excluded
	Livestock	Yes	A required source when emissions from grazing are not de minimis
N ₂ O (nitrous oxide)	Burning of biomass	No	Conservatively excluded
	Livestock	No	Excluded on the basis of applicability condition 14
	Synthetic fertilizer	No	Conservatively excluded

Table 7: Carbon pools

Carbon pool	Required?	Inclusion?	Justification/Explanation
Above-ground merchantable tree (AGMT)	Yes, if baseline scenario or project activity (ies) include the harvest of long-lived wood products. Otherwise, accounting for this carbon pool is not required.	No	Pool not required; the baseline scenario does not include the harvest of long-lived wood products. Conservatively excluded
Above-ground other tree (AGOT)	Yes	Yes	Mandatory. Major pool considered
Aboveground non-tree (AGNT)	Yes, if the baseline scenario includes perennial tree crops. Otherwise, accounting for this carbon pool is optional.	Yes	Pool monitored in the carbon plots

⁴⁰ Potential periods subject to change

Carbon pool	Required?	Inclusion?	Justification/Explanation
Below-ground merchantable tree (BGMT)	Optional	No	Conservatively excluded
Below-ground other tree (BGOT)	Optional	Yes	Optional. May be conservatively excluded
Below-ground non-tree (BGNT)	Optional	Yes	Optional. May be conservatively excluded
Litter (LTR)	No	No	Always conservatively excluded
Deadwood (DW)	Yes, if AGMT is selected	No	Conservatively excluded
Standing deadwood (SD)	Optional	No	Conservatively excluded
Lying deadwood (LD)	Optional	No	Conservatively excluded
Soil organic carbon (SOC)	Optional	Yes	Pool monitored in the carbon plots
Long-lived wood products (WP)	Yes, if AGMT is selected	No	Conservatively excluded

3.1.4 Baseline Scenario

Below is a description of the different steps followed to determine the baseline scenario according to the methodology.

Identification of Agents and Drivers of Deforestation

The interplay of several direct, as well as underlying factors, drives deforestation in different ways. The important underlying factors of policy and institutional factors such as formal state policies, climate policy, and property rights arrangements, exert the strongest impact on proximate causes, while economic factors dominate the overall frequency pattern of cause occurrence (Geist & Lambin, 2002).

Despite the vast availability of natural resources and potential of CAR, social and economic situations are still deteriorating over time, resulting in a big pressure on the natural resources and creating accelerated environmental degradation. In general, biodiversity is declining on a yearly basis, and watersheds dry up periodically. The scale of poaching and excessive logging results in the drastic reduction of tanks woody species and non-timber, which leads to large-scale deforestation that leaves room for gradual desertification (Francis et al., 2016).

The former Ministry of Environment and Ecology, now called Ministry of Environment, Sustainable Development, Water, Forests, Hunting and Fishing, presented in its readiness preparation proposal (2011) to the Forest Carbon Partnership, general drivers of deforestation and degradation for the country that include: lack of policy coordination and weak institutions, lack of dissemination of technical progress, economic weakness and the focus on the exploitation of natural resources, high population growth, lack of understanding of the notion of the environmental common good, and insecurity and political and military crises. The direct threats on forests include unsustainable extensive livestock farming, unsustainable slash and burn agricultural practices, uncontrolled logging and harvest of non-timber forest products (NTFP), and infrastructure development (roads, mining, housing). These threats are aligned with the analysis of Francis et al., (2016), who identified similar pressure against forests, economic crisis, poverty, slash and burn agriculture, and bush fires; which opens logging access to the colonisation of formerly uninhabited areas and facilitates the intensive clearing of forests through the introduction of specialised chainsaws and professional logging.

Direct Drivers

Knowing and understanding the sources of the direct threats to the natural resources and ecosystems, and in turn, how these threats impact the habitats and species is crucial to identify the drivers of deforestation and develop any conservation actions. Conservation actions tend to focus to a large extent on the drivers and sources of the threats, rather than the direct threats have identified already the threats for the region, shown in Table 8.

Table 8: Direct threats identified for Chinko

Direct Threats	Lowland Forest	Savannah Mosaic
Overgrazing and transhumance	x	x
Slash and burn agriculture (Shifting)	x	
Logging (Fuelwood)	x	
Unsustainable harvesting of Non-Timber Forest Products (NTPs)	x	
Population Growth -Incompatible settlement	x	x
Inefficient exploitation of minerals/illegal mining (small scale)	x	

Source: (Ondoua Ondoua, G. et al 2017).

These threats are listed from the major deforestation impact and can be considered the main direct drivers that affect the forest resources in the project area. The transhumance and livestock overgrazing activities, plus slash and burn agriculture, are the two main factors that drive deforestation in the project area and are described below:

Overgrazing and Transhumance

Transhumance is the action or practice of moving livestock from one grazing ground to another in search of water and food, and is characterised by regular seasonal movements. The herds generally leave an environment where pasture has become scarce. It differs from nomadism in that only a few individuals accompany the flock or herd, while the largest part of the pastoral group remains sedentary. Cross-border

or long-distance transhumance involves mainly cattle, is usually north-south, and herds may travel several hundred kilometres annually.

With nearly 16 million ha of largely undeveloped pastureland, almost as much arable land, and a dense river system, the Central African Republic is a key area for livestock survival in Central Africa. Livestock accounts for 12.7% of Central Africa's gross domestic product (GDP) and contributes to the country's economic growth, representing 35% of the agricultural sector's GDP. The livestock industry is essentially driven through transhumance, which allows farmers to adapt to a dry environment and an increasingly variable climate by using pastures located in various areas (International Crisis Group, 2014a).

Several types of transhumance movements cross the Central African Republic: internal transhumance, involving some 250,000 pastoralists, mainly of the Fulani and Mbororo ethnic groups; and cross-border transhumance during the dry season when Chadian or Sudanese oxen move through the Chinko area in search of pasture in the north, and to sell the cattle in south lands (Figure 11).



The military-political crisis in the Central African Republic since 2013⁴¹ has particularly affected the transhumance livestock sector. Since the beginning of the crisis, vaccination and deworming campaigns have been extremely difficult to carry out, while the cross-border movement of animals from Chad, Sudan, and southern Sudan remained unmonitored and unchecked. In addition, many of the infrastructures necessary for the operation of the sector have been destroyed or looted. These dynamics are also fuelled by certain political and social actors. Armed groups have developed conflict-based rhetoric based on religion and ethnicity, exacerbating tensions between farmers and pastoralists (FAO 2019).

Due to the lack of knowledge concerning the transhumance corridors, it is becoming more difficult to control the movements of cattle herds and restrict their impacts to narrower areas, forest areas, and circumventing protected areas. By avoiding protected areas, environmental degradation of these important habitats would be minimised. Containing movements of the cattle herds may also geographically restrict poaching by the herders and avoid disease transmission to wildlife.

⁴¹ The Central African Republic crisis, obtained from: <https://gsdrc.org/publications/the-central-african-republic-crisis/>

Establishing corridors will require rational land-use planning in consultation with all stakeholders. Transhumance corridors have been successfully created and managed in West Africa, where both farmers and pastoralists recognise the importance of corridors for their peaceful coexistence (Alidou, 2016).

Slash and burn agriculture (Shifting practices)

Although the country has no updated reliable figures on the rate of deforestation due to slash and burn agriculture, many studies on the CAR forests have shown that it is replaced by agricultural plots (the World Bank Group, 2010).

Agriculture remains by far the region's largest employer in the country (Figure 12), where more than half of the economically active population is still engaged in agricultural activities. However, the formal agricultural jobs have been decreasing, instead mainly promoting the food importations and subsistence agriculture.

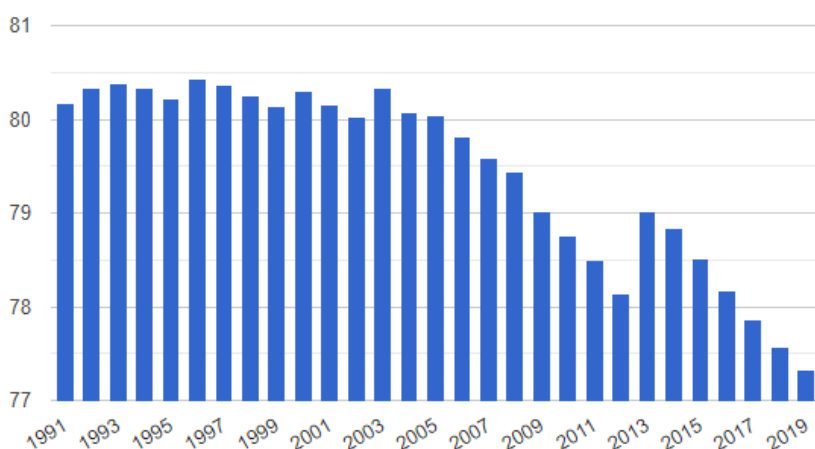


Figure 12: Percentage of employment in agriculture in CAR⁴²

Despite its importance, the agriculture sector has been neglected and underfunded for much of the past few decades. Most agriculture is small-scale, and the sector is dominated by traditional subsistence systems. Agricultural productivity in the country is very low compared with other tropical countries, with very low fertiliser use overall. As a result, reliance on food imports is substantial and increasing (Behrendt, Megevand, & Sander, 2013).

The potential for agricultural development in the country is significant for many reasons. The country has unconstrained water resources, which gives it an edge over other areas that may face water scarcity because of climate change. The rapidly urbanising populations, as well as increasing international demands for food and energy, could drive a dramatic demand for agricultural products from the country.

These factors combine to make agriculture a very promising sector. Future agricultural developments may, however, be at the expense of forests. Unlocking the agriculture potential could increase pressure on forests, particularly if investments in road infrastructure remove a long-lasting bottleneck to market access (Behrendt et al., 2013).

⁴² https://www.theglobaleconomy.com/Central-African-Republic/Employment_in_agriculture/

Logging (Firewood and charcoal production)

In CAR, wood remains the main source of energy for the households (Behrendt et al., 2013). While wood was obtained from the clearing of fields or in nature (dead trees), the exploitation of firewood is now a tangible informal industry. While some people gather together to produce firewood and charcoal, others provide chainsaws to young people (Francis et al., 2016).

The urban lifestyle leans towards being energy-intensive because households in urban areas tend to be smaller – leading to less efficient fuel use for cooking, per capita. Charcoal is often the primary cooking fuel for many small-scale roadside restaurants and in the kitchens of larger public institutions, such as schools and universities, hospitals, and prisons, as well as small-scale industries. The CAR is witnessing a shift from wood fuel to charcoal consumption, because charcoal is cheaper and easier to transport and store.

The wood fuel collection becomes a serious threat to forests in densely populated areas. In rural areas, the impact of wood fuel collection may be offset by natural forest regeneration, but it can become a severe cause of forest degradation and eventual deforestation when demand comes from concentrated markets such as urban households and businesses.

Wood biomass energy is supplied by an inefficient sector. Charcoal is mostly produced using traditional techniques, with low transformation efficiencies (earth pit or earth mound kilns). The organisation of the charcoal supply chain is also notoriously inefficient, relying on poorly designed regulatory frameworks that eventually lead to massive informality in the sector (Behrendt et al., 2013).

Unsustainable harvesting of Non-Timber Forest products

The importance of non-timber forest products (NTFPs) to rural, forest-based people's livelihoods has been increasingly recognised because it is a clear need. When NTFPs move from subsistence use to commercialisation, the livelihoods of urban traders and consumers become interlinked with demand and supply pressures that can lead to unsustainable exploitation and concerns about biodiversity conservation and forest degradation. In the Congo Basin, over 500 species are used as food, medicine and fuel. About 50% of these are traded, however surprisingly little is known of the value, scale, and circuits of commercialisation, despite centuries of trade. Historically policy and regulatory attention has also focused largely on timber (Ingram, 2014).

NTFPs have a major role in rural employment and income generation, mostly in the informal sector. In Central Africa, it is estimated that about 6.5 million people are engaged in NTFPs activities (FAO, 2009). Rural women, in particular, are involved in gathering and processing NTFPs, and are likely to be the main beneficiaries or losers from forest resource management interventions in Central Africa that may affect free access to the forests.

Domestication of wild resources presents a promising opportunity for investment and for employment, or self-employment, for local farmers and NTFPs gatherers. The Central African Republic has experienced the first industrial exploitation of its forests in 1946 (Francis et al., 2016). However, neither domestication nor increasing the gathering and hunting pressure of NTFPs species can continue in an unregulated way, as it may exclude the weakest members of rural society from continuing their NTFPs gathering activities for subsistence and income generation. Furthermore, unregulated exploitation of any NTFPs may lead to overharvesting of the species and forest degradation. Hence there is a need to put in place a regulatory framework governing access to the forests for all users (Tieguhong et al., 2009).

Population growth/ Illegal settlements

Greater Bangui, the capital of the country, presents a specific profile with most households still relying on fuelwood. With an estimated 800,000 inhabitants, greater Bangui grows at an annual rate of nearly 3%. The city is characterised by uncontrolled urbanisation, linked to poverty and insecurity. It still contains plenty of partially rural areas and open spaces (Behrendt et al., 2013).

Lack of connectivity prevents the modernisation of local farming practices, with farmers unable to rely on markets for either inputs or outputs, and forced to rely on self-subsistence. In the Democratic Republic of Congo, it is estimated that only 33% (7.6 million of the 22.5 million ha) of all non-forested suitable arable land is less than six hours from a major market; that proportion is as low as 16% in the Central African Republic (Deininger, Hilhorst, & Songwe, 2014).

The CAR has made significant progress in the transport, water, power, and information and communications technology (ICT) sectors. But the high cost of fuel, which raises transportation and energy costs, has been a vexing issue across all infrastructure sectors. The CAR's most pressing infrastructural challenge lies in the transport sector, which relies heavily on neighbouring countries and could benefit from improved road conditions and enhanced performance at the port of Douala in Cameroon. In the power sector, the country suffers from a deteriorating infrastructure stock that it can no longer afford to maintain, and an inefficient and unreliable power supply. Additional challenges include a need for improved infrastructure in the water and sanitation, and ICT sectors (Dominguez-Torres & Foster, 2011).

Artisanal mining (Diamond Mining)

The CAR has a lot of mining resources throughout the country – diamonds, gold, uranium, iron, copper are present in the northeast (prefecture of Haute-Kotto) where some part of the project is located, and southwest (prefectures of Mabere-Kadei, Sangha-Mbaere, and Lobaye). Annual production is estimated at 500,000 carats of diamonds, and is an important source of foreign exchange for the country. It is mainly an artisanal alluvial diamond activity. Riparian forests and gallery forests are systematically destroyed. In some localised cases, artisanal mining has diverted watercourses or contaminated water, damaging the local ecosystem (Francis et al., 2016).

Underlying Drivers

Underlying driving forces were categorised into five broad clusters (Geist & Lambin, 2002): demographic, economic, technological, policy and institutional, and cultural factors (Table 9). Each driving force was further subdivided into specific factors; for example, cultural or socio-political factors were partitioned into public attitudes, values, and beliefs, and individual or household behaviour.

Table 9: Underlying drivers' factors

Demographic	Economic	Technological	Policy and institutional	Cultural
Natural increment	Market growth	Agro-technical change	Formal policies	Public attitudes, values, and beliefs
Migration	Economic structures	Applications in the wood sector	Policy climate	Individual and household behaviour

Population density	Urbanization and Industrialization	Agricultural production factors	Property rights	
Population distribution	Special variables (e.g prices increases)		Political stability	
Life cycle features				

Source: (Geist & Lambin, 2002)

According to this classification, the deforestation underlying drivers in the country are described as follows:

Policy and institutional factors

Insecure forest governance:

The country has been improving and strengthening the institutions to implement rules, and build links, within a complex political-economy scenario. Administrations frequently try to face challenges and expectations in terms of planning, monitoring, and controlling forest resources. However, properly staffed and equipped institutions are necessary not only to fight illegal activities, but also to undertake the difficult tasks of formalising artisanal logging, the wood fuel/charcoal value chain, and artisanal mining in critical ecosystems (Behrendt et al., 2013).

Despite improvements in forest governance with the new provisions of the Central African Forest Code, fraud is still the top illegal activity in the sector. Indeed, several fraudulent behaviours are noted, coming from some loggers. Breaches of the PEA specifications are diverse: no definition of agricultural series, operating outside the limits of felling even PEA, overtaking fixed exploitable volumes, and back on the same plate cutting, for example (Francis et al., 2016).

Illegality and warfare

Different authors have undertaken research to understand the scope and scale of violence in the Central African Republic. Over the last few years researchers have cited a variety of social grievances focusing on the political manipulation of religion, belonging, and access to opportunities. The violence must be understood in the context of social practices of violence that long predates the war. The prevalence of popular punishment and vengeance, which have long histories as elements of statecraft in the CAR, have become even more widespread amid the generalised insecurity and anomie that have set in over the past few decades.

In the CCA, hunting is the main income generating activity and is unlikely to always be legal. Although people hunt mostly for their consumption and subsistence, they sell sometimes to restaurant owners and traders. There is no formal organisation of hunting and, increasingly, people from neighbouring towns and cities hunt without the permission of local communities. This has become a conflict among local people (Ondoua Ondoua, G. et al 2017).

Poaching is usually supported by organised armed groups who use these illegal activities to fund the rebellion groups. In CAR, the economy has suffered considerably since late 2012 when rebel groups took control of towns in the centre and north of the country. Despite the deployment of peacekeepers from the African Union, United Nations and France, and the signing of a ceasefire in July 2014, the situation remains volatile. For the first decade of the century, the country had experienced positive, albeit erratic, growth (Flavia Schlegel, 2016).



Figure 13: Poachers (blue) and trafficking (red) routes around Chinko

Though people have important reservations about popular punishment, they also see vengeance as an important tool for enforcing a circumscribed mode of empathy and a minimum set of standards for social behaviour. These experiences in the CAR suggest that those wishing to understand how wartime mobilisation happens must consider not just fighters' grievances, but also people's conceptions of the practical and symbolic efficacy of vengeance and popular punishment as elements of politics and the management of threats (Lombard & Batianga-Kinzi, 2015).

There are many armed groups in the country, the most influent in the country are FACA,⁴³ Seleka,⁴⁴ not all of them are local like LRA,⁴⁵ but it's well know that CAR is a central spot for poachers and traffic corridors (Figure 14). The LRA was formed 30 years ago in Uganda to overthrow the Museveni government. The LRA has a savage reputation for murder, mutilation of their victims, and abduction of women and children, and their messianic leader, Joseph Kony, is wanted by for human rights abuses.⁴⁶

⁴³ Central African Armed Forces

⁴⁴ Armed, organized rebel movement Séléka (meaning "alliance" in Sango).

⁴⁵ The Lord's Resistance Army

⁴⁶ The International Criminal Court

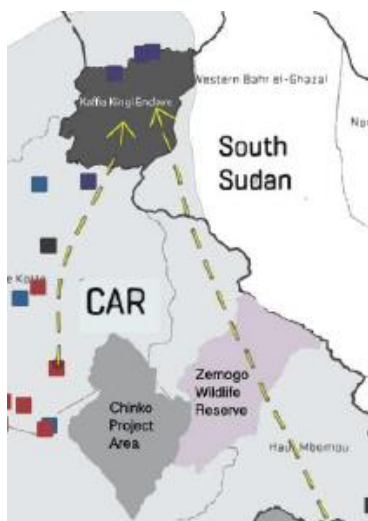


Figure 14: LRA corridors around Chinko

When the government of the CAR was overthrown in 2013, an explosion of sectarian violence created more space for the LRA to operate. The LRA-affected areas of the CAR are now governed by a patchwork of state, non-state, and international armed groups. Troops from the UN peacekeeping mission in the CAR (MINUSCA) control several major towns in Mbomou and Haute-Kotto prefectures (where the project area is located), but the LRA has been able to exploit gaps in this security patchwork (Lombard & Batianga-Kinzi, 2015).

Demographic factors

Extreme poverty and population growth

The CAR has an average annual growth rate of 2.5%. In urban centres, the annual growth rate of Bangui is 3.88%, with a spatial growth of 328% between 1986 and 2000 (Mokpidie et al., 2014). This urban growth is due to the rural exodus which has driven impoverishment and insecurity in inland areas. However, the rate of economic growth over the last 20 years is estimated at 0.4%. This lack of economic performance reflects widespread poverty.

Lack of infrastructure and technologies

The country was included in the list of beneficiary countries for the first phase of the Spanish funded project on Capacity Building in Science, Technology, and Innovation (STI) Policy⁴⁷ in Africa, during which UNESCO provided technical assistance and consultancy services to develop the national policy for STI. Throughout 2008 and 2009, missions, consultations, and interviews were held with most of the STI stakeholders in the country, and a first draft of the National STI Policy framework document was produced and submitted to the Central African government for comments and discussion.

Infrastructure and services are extremely poor in the CAR. Basic services including electricity, telecommunications, and banking are commonly lacking or absent completely beyond the capital city, in Bangui. The low rate of penetration is mainly due to the lack of infrastructure that covers just 30% (Figure

⁴⁷ <http://www.unesco.org/new/en/natural-sciences/science-technology/sti-policy/africa/capacity-building-in-sti-policy-in-africa/>

15) of the population affects the technology development, tele-density is very low and despite exponential growth in mobile telephone subscribers, the system for mobile communications only covers the capital. Less than 5% of the population has access to internet (Figure 16).

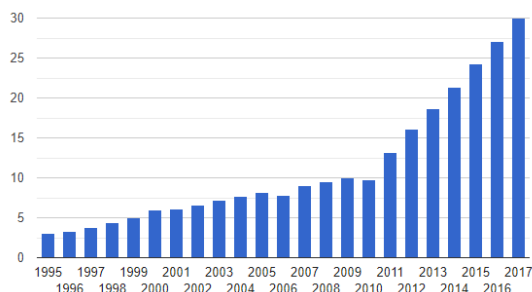


Figure 15: CAR, percentage of population with access to electricity⁴⁸

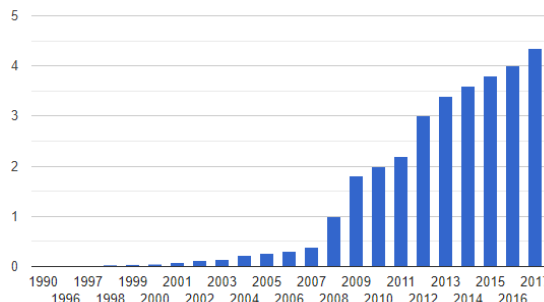


Figure 16: CAR, percentage of population with Internet access⁴⁹

Agents

The agents of conversion are:

Local communities: these communities are sedentary communities that live on the periphery of the project area. The sedentary agriculturalists in the region are the Bantu people. The Bantu people living in the vicinity of the CCA are Banda.

Poverty is prevalent in the region and there are few economic opportunities for the communities living in the area. As a result, local settled communities are greatly dependent on natural resources. These isolated communities make their living through small-scale agriculture, livestock rearing, hunting (both legal and illegal), fishing, harvesting of NTFPs, artisanal mining, small trade, temporary employment, and handicrafts.

Growing crops is a major livelihood activity of most Bantu communities in the area. On average, people cultivate one or two fields each year. Most are cultivated by the owners, who grow mainly food. Some Bantu families keep free-ranging animals including cattle, pigs, small ruminants (goats and sheep) and poultry.

Transhumant pastoralists: the transhumant pastoralist communities living in the landscape are the Fulani. The Fulani are the ethnic group with the largest nomadic pastoral community in the world. The Mbororo peoples are nomadic communities of Fulani cattle herders. They do not live in fixed abodes or practice agriculture, but spend most of the time travelling in search of new pasture for their cattle. The settled Fulani rear large ruminants, mostly cattle and donkeys.

Delineating Project Accounting Areas

The area under control within the project area at the time of validation was divided into two PAAs, one per instance. However, once the proponent gains control and new agreements are signed with the government to expand the area under control, new PAAs will be added. The current PAAs in the project were selected first according to the ZIC limits, (see section Spatial boundaries) and later considering only the areas that

⁴⁸ https://www.theglobaleconomy.com/Central-African-Republic/Access_to_electricity/

⁴⁹ https://www.theglobaleconomy.com/Central-African-Republic/Internet_users/

has been forest (according to the national definition) during at least 10 years prior the starting date. For more details, please refer to Annex 3 – Land-cover procedure, which explains the stratification process.

Figure 17 shows the current Project Accounting Areas, including aerial or satellite imagery showing that they are forested as of the project start date and 10 years prior to the project start date.

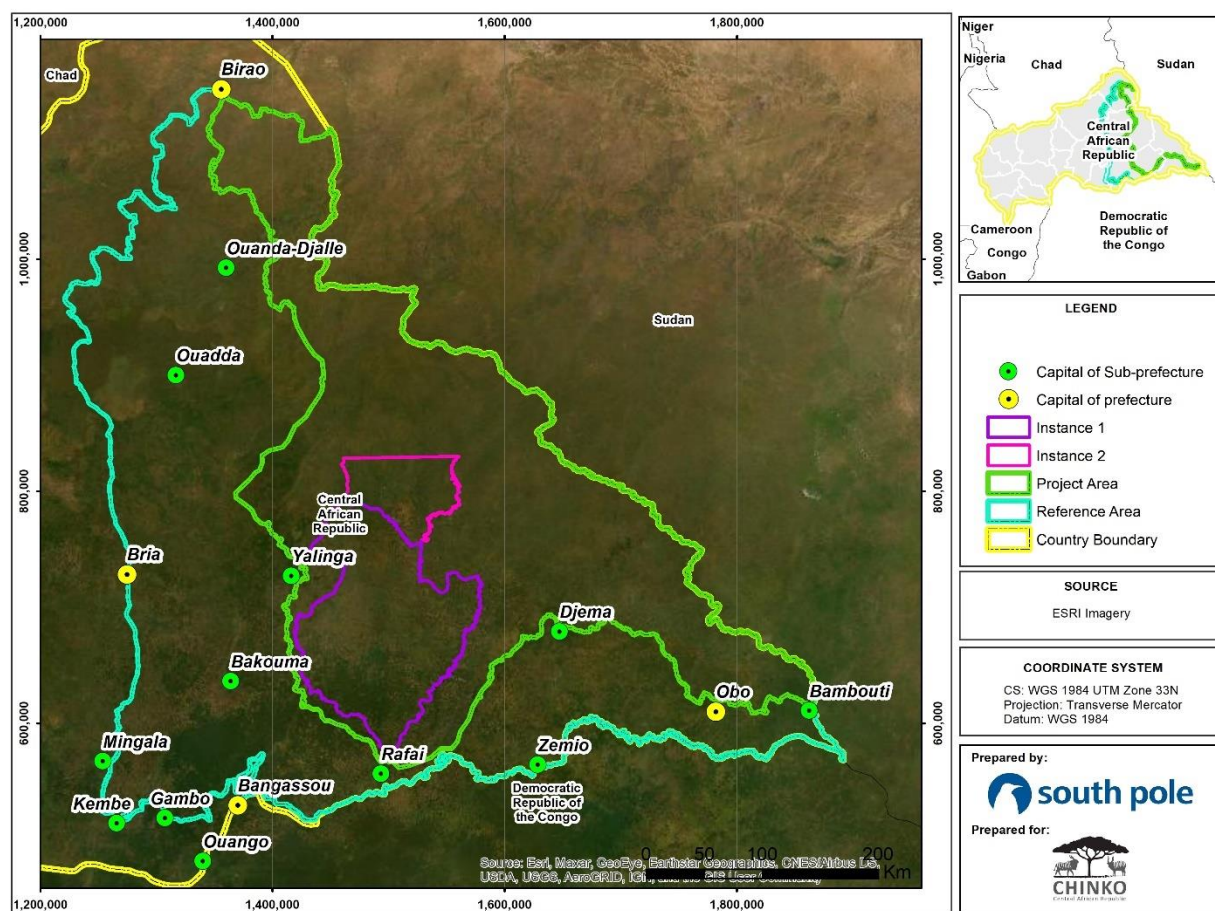


Figure 17: Project accounting areas

Identifying Baselines types

The baseline types were identified through a spatial analysis of the project area following the guideline from the methodology (see Annex 4 – Baseline definition for more details).

The results show the percentage of deforestation within a period 10 years prior to the project start date, and within 120m of the project perimeter is less than 25% (see Figure 18), therefore, baseline type F-U3 was selected.

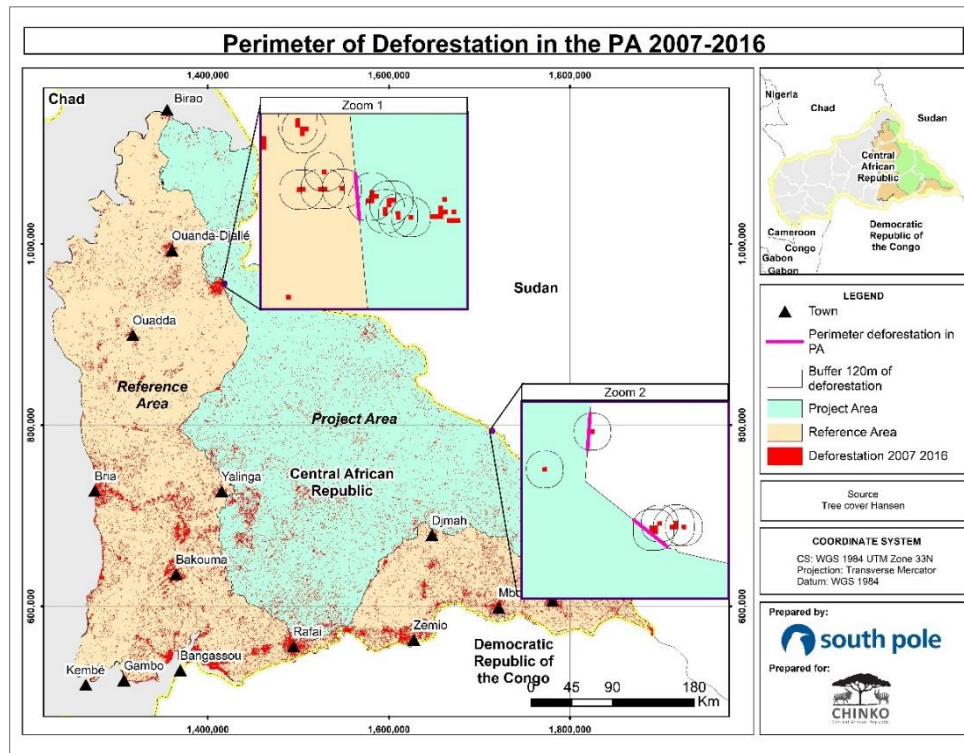


Figure 18: Delimitation of the perimeter of deforestation in PA

Delineating Proxy Areas

For the proxy areas, the closest active agricultural site and exploited mines of the CCA in the southwest given that this area is accessible in times of difficult conditions like broken roads and insecurity were selected. These areas have similar vegetation, soil and climatic conditions and are very close to the actual reference sites of the vegetation diversity and biomass inventory (4-33 km from the CCA borders and 36-78 km from reference plots on the same geographical altitude).

Given the time constraints of the first baseline vegetation diversity and biomass study in 2020, we use overgrazed areas within the CCA to have a comparison of natural vegetation with modified landscape. Thousands of livestock crossed the area of the CCA from 2010 to 2017 on a path from east to the west that is locally known as “Marche-Bangui”. This transhumance path was illegal established in managed hunting zones (48-Bas-Chinko, 49-Dembia) to avoid conflicts with the local communities in Rafai and Bangassou and to have access to best pastureland and rich wildlife areas for illegal hunting of wildlife. Despite the fact that this “Marche-Bangui” was mainly active for about 6 years and stopped in 2017, signs of trampling and overgrazing is still visible in 2021. Therefore, the ancient “Marche-Bangui” was chosen as proxy-area to quantify the effect of pastoralism on the natural vegetation of Eastern CAR. However, it will be very important to carefully measure plots around Alindao since there a long-term use of livestock is documented and still ongoing. The effects of overgrazing and trampling measures within the CCA can be regarded as very conservative since negative effects seems to be marginal to the long-term impact on heavily grazed areas outside of the CCA. Another good proxy area would be selected areas around Zémio and Mboki since effects of livestock of local and international transhumance is already well pronounced there. However, ongoing political tension prohibit any field work in this area at that stage.

The land cover analysis shows that these areas were all classified as non-eligible – converted for the 2015 – 2016 period (see Figure 19).⁵⁰

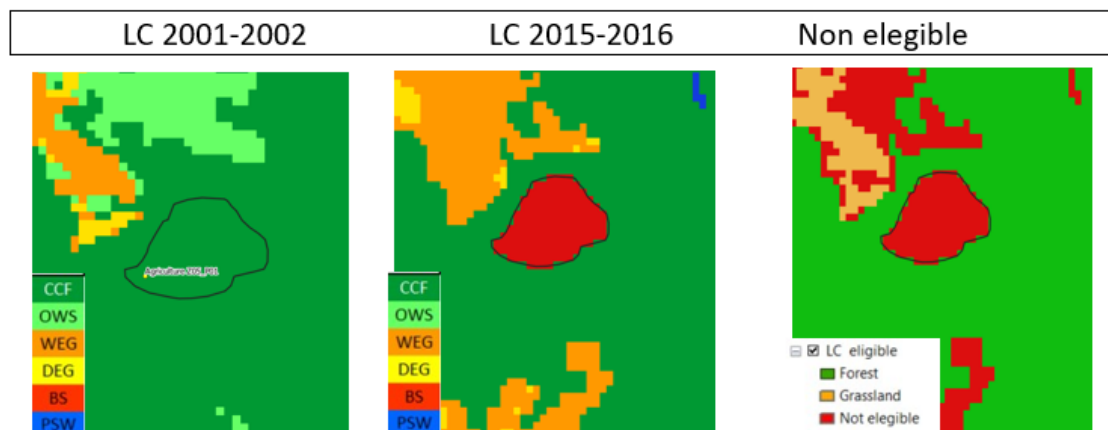


Figure 19: Agriculture proxy site conversion analysis

Baseline scenarios for selected carbon pools

A qualitative description of the baseline scenario for each selected carbon pool follows.

Above-ground other tree (AGOT): assumed to be completely removed from the forest during the degradation and deforestation process for the baseline scenario. The trees in this pool are assumed to have an immediate loss to CO₂e emissions. As the forest PAA baseline type is F-U3, it is also assumed to be converted to an emission first in the stratum with the lowest carbon stocks, and last in the stratum with the highest carbon stocks.

Above-ground non-tree (AGNT): assumed to be completely removed from the forest during the degradation and deforestation process for the baseline scenario. The stocks in this pool are assumed to have an immediate loss to CO₂e emissions. As the forest PAA baseline type is F-U3, it is also assumed to be converted to an emission first in the stratum, with the lowest carbon stocks and last in the stratum with the highest carbon stocks.

Below-ground other tree (BGOT) and below-ground non-tree (BGNT): these are assumed to be minimally impacted by the activities of the agents, therefore, the below-ground carbon pool is assumed to decay over a ten-year period. As the forest PAA baseline type is F-U3, it is also assumed to be converted to an emission first in the stratum with the lowest carbon stocks, and last in the stratum with the highest carbon stocks. Emissions from the pool are determined using a root-to-shoot ratio.

Soil organic carbon (SOC): soil is assumed to lose its organic carbon over time as a result of land conversion, and the residual soil is determined using plots in the proxy area. The emissions for SOC are given a default rate of 0.2 by the emission model of the methodology used. As the forest PAA baseline type is F-U3, it is also assumed to be converted to an emission first in the stratum, with the lowest carbon stocks and last in the stratum with the highest carbon stocks.

⁵⁰ Results of the spatial analysis to demonstrate the proxy area is converted, on average, as of the project start date on each proxy site is available on the supporting information.

Determining Historical Conversion

Delineating Reference Areas

The reference areas were delineated for the project taking into account the actions of the agents, which have similar practices as those that would have been occurred within the PAAs in the absence of the project. As explained in section Identification of Agents and Drivers of Deforestation, the pastoralists are commonly found in the eastern part of the country (see Figure 20) and, in the absence of the project, they would have continued use of the project area for their activities in a non-sustainable way, and affecting an increased area over time.

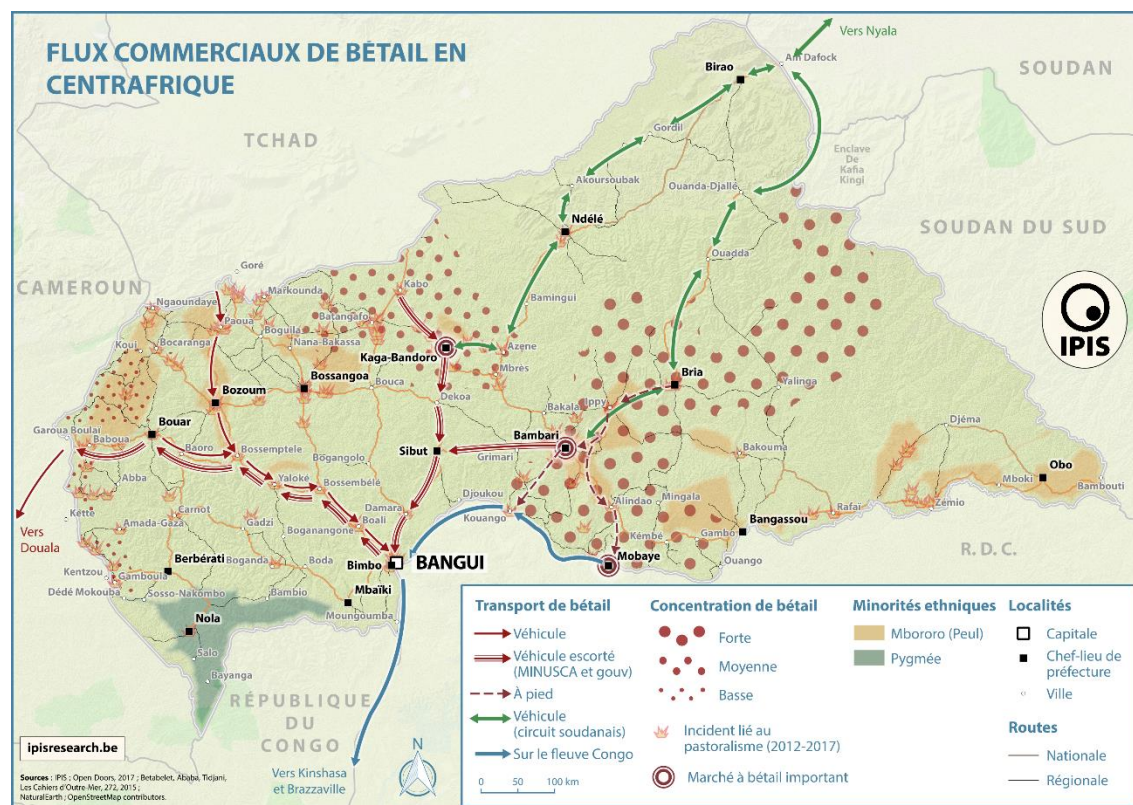


Figure 20: Pastoralism corridors in the Central African Republic, 2017⁵¹

The reference area boundaries were selected taking into account the location, mobility and action of the agents, the location and size of the different PAAs, the constraints to expand the reference area outside the country border, the main roads in the region, and the landscape configuration, including the minimum and maximum heights present in the project area and the land cover. Figure 21 below shows the constraints of the reference area, Table 10 presents a comparison between the project area and the reference area and demonstrates that the reference area had as much forest as the PAAs at some point in time during the historic reference period date (for more details check Annex 3 – Land-cover procedure).

⁵¹ Obtained from: <https://ipisresearch.be/publication/pastoralism-corridors-central-african-republic/>

Table 10: Results of land cover analysis

Area	Forest area (ha)
	2015 - 2016
Reference area	9,830,254
Project area	9,644,786

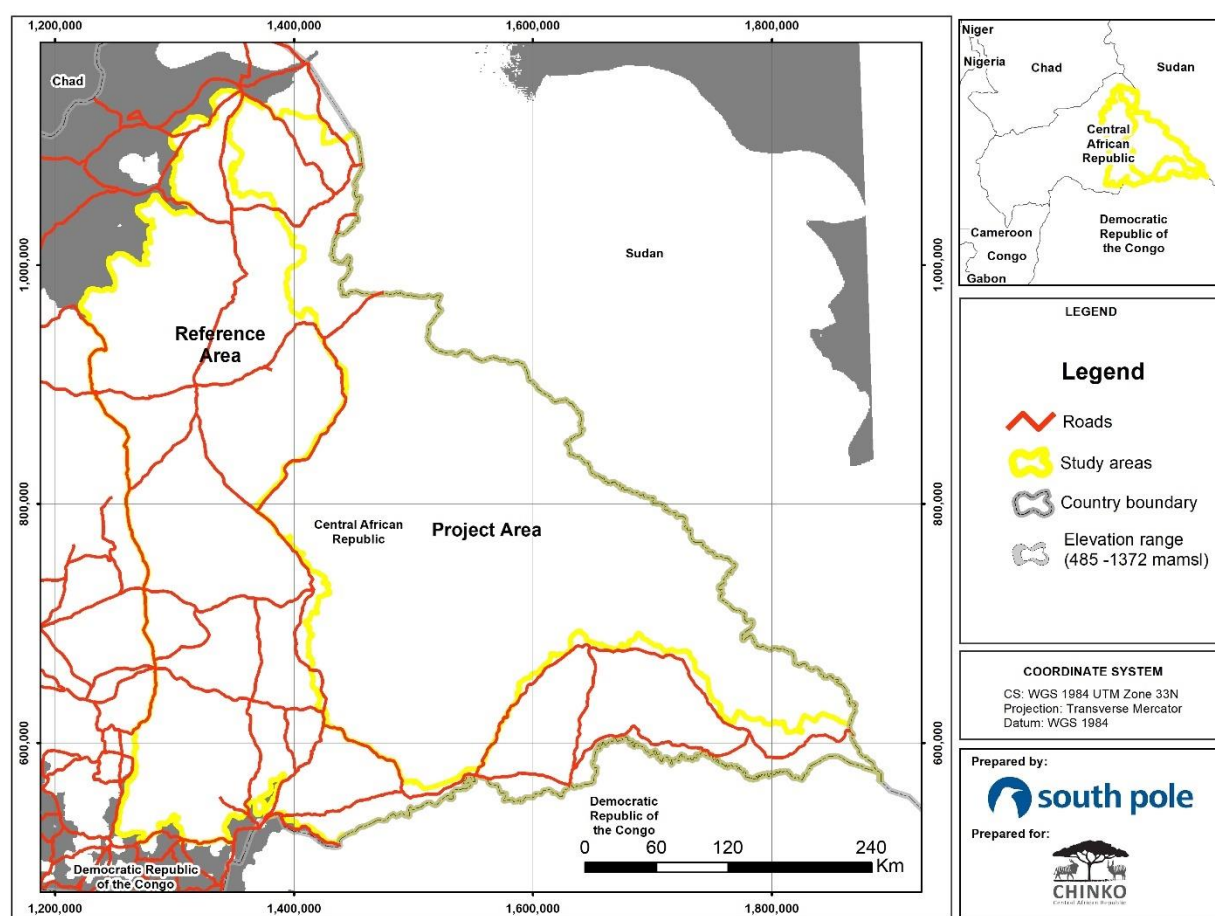


Figure 21: Reference Area constraints (roads, elevation range and country border)

Defining the Historic Reference Period

The historic reference period for the project is 3 January, 2001, to 9 March, 2016. The period was selected to cover at least 10 years of analysis, and to take into account important events related to the agents and drivers of conversion. These include the Bush War (covering the period from 2004 to 2007); the start of the pastoralist activities in the eastern CAR, which started in 2010 and intensified from 2013; and the current

civil war in the country which began in 2012. The available historic imagery for the reference area is listed in the Appendix 1 of the Annex 5 – Grid analysis.

Selecting historical imagery

The dates of the historic images used are spread evenly throughout the historical reference period, adhering to the stationarity and specific requirements of the methodology. This project has images which cover five years: 2001, 2004, 2007, 2010 and 2016. Multiple tiles were required to cover the reference area, as depicted below in Figure 22 and listed in the Appendix 1 of the Annex 5 – Grid analysis.

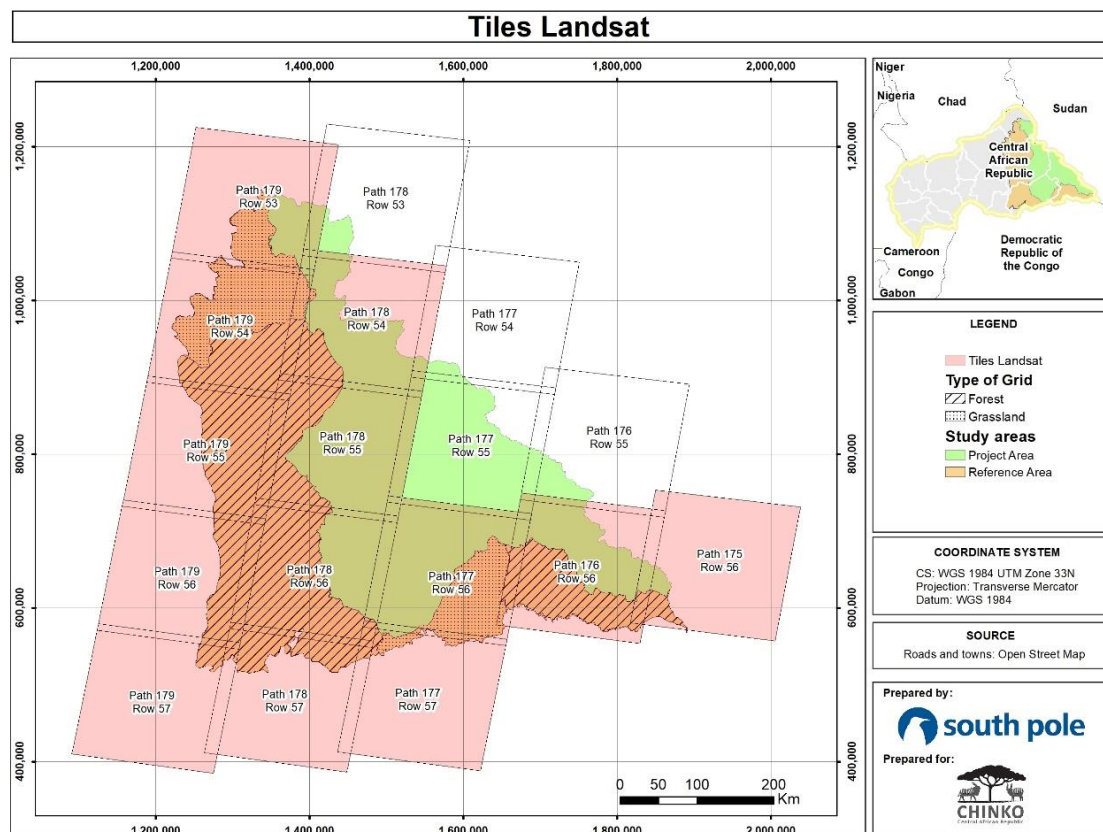


Figure 22: Locations of Landsat Tiles overlapping the reference area

Figure 23 shows the selected periods for this analysis. These periods were compiled by maximising the number of available observations per year, keeping the temporal stationary through the reference period, and highlighting years of important events. Due to the extension of the reference area in Chinko, and the variation of climatic conditions in the north and south, we have images in some areas with clear observations, while others are not. To maintain consistency in the observations of the grid points and the reference period, we only used images during the dry season at the beginning of the year, from January to March.

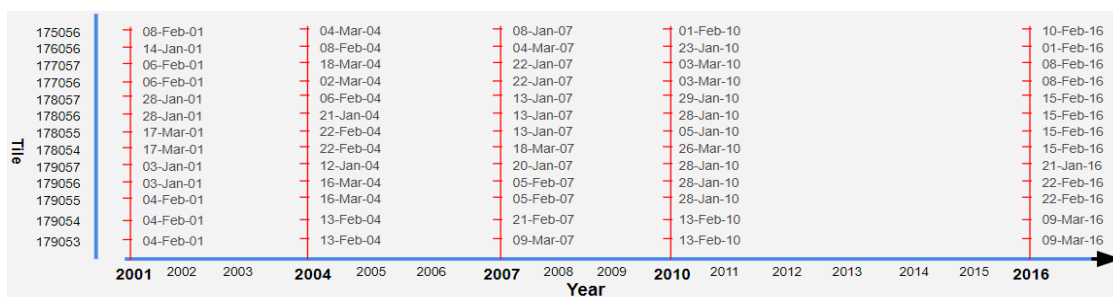


Figure 23: A timeline of the imagery used in the BEM

All of the images used for the analysis of the historic reference period came from the Landsat program,⁵² and correspond to L2 band: images that are geometrically and atmospherically correct, and show reflectance at the level of the surface, all the images have a spatial resolution of 30 x 30 m (see Table 11). According to the USGS/NASA website⁵³, each image passed a test in which two separate images were required to contain a maximum image to image error of 0.4-pixel (12 m) at a 90% confidence interval.

Table 11: Landsat Bands L8 and L7

Landsat 7 ETM Bands (µm)			Landsat 8 OLI Bands (µm)		
Band	Resolution	Band	Resolution	Band	Resolution
B1-Blue	30	B1-Blue	30	B1-Blue	30
B2-Green	30	B2-Green	30	B2-Green	30
B3-Red	30	B3-Red	30	B3-Red	30
B4-NIR	30	B4-NIR	30	B4-NIR	30
B5-SWIR-1	30	B5-SWIR-1	30	B5-SWIR-1	30
B7-SWIR-2	30	B7-SWIR-2	30	B7-SWIR-2	30

Determining sample size

According to the methodology VM0009, the calculation of the number of observations over space used for the analysis of historical conversion in the reference area is based on the number of observations needed to achieve the required statistical precision to fit the logistic function for the BEM. Normally, a pilot sample can be distributed across the reference area, in order to estimate the population variance and the final sample size needed to estimate the conversion parameters α , β , and θ . However, due to the extension of the area we have incorporated a stratified sampling approach with additional criteria depending on the land cover.

⁵² [Landsat Homepage | Landsat Science \(nasa.gov\)](https://landsat.gsfc.nasa.gov/)

⁵³ [Landsat Collection 1 \(usgs.gov\)](https://landsatcollection1.usgs.gov/)

By using the land cover map of 2001–2002 we created regular sampling with a distance of 10,000 m and included only those points that intersect the mask of forest (OWS and CCF). Assuming that deforestation is more likely to occur in proximity to drivers of conversion, for example, roads, we densified the grid around a buffer of 7.5 km around all highways, simple roads or paths. This resulted in a total of 3,441 points.

Table 12: Land use grid spacing for the BEM(s)

Type	Reference area (Ha)	%	Land cover area 2001-2002 (Ha)	Sample grid spacing (m)	# Samples spatiality	# Of reference periods (Years)	# Of total samples
Forest	8,320,089.6	75.1%	10,309,130.2	3,500 m and 10,000 m	3,441	5	17,205

Figure 24 shows the double coverage map in the reference area.

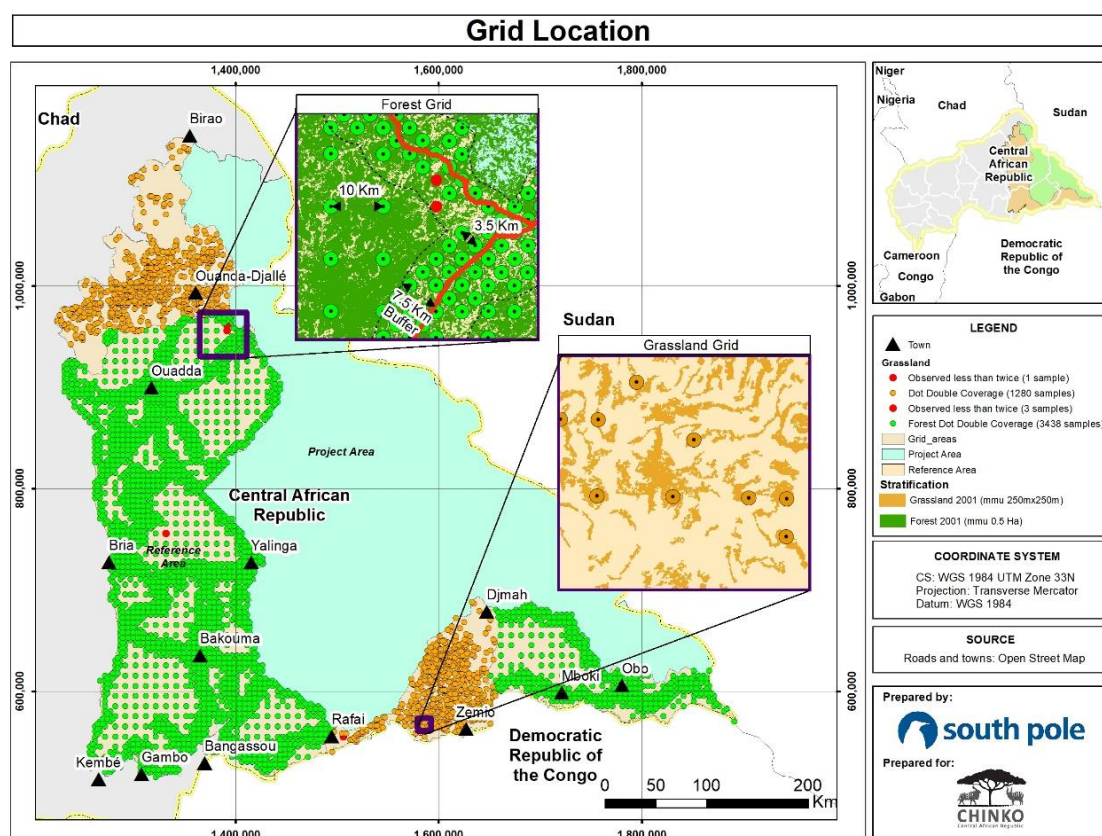


Figure 24: Double point coverage in Chinko reference area for the Biomass Emissions Model (BEM)

Double coverage analysis shows that 99.99% of the reference area met the requirement. From 3,441 sample points of forest, three points were observed less than twice.

Considering the total number of points we evaluated the percentage that was observed annually during the reference period in order to decide where we could mitigate the possible systematic cloud coverage during the inspection of point by point. The selected periods with the largest number of points with available observations corresponded to the limits, that is 2001 and 2016, and one in between, 2010 (see Figure 25). Additionally, this analysis took into consideration the years 2004 and 2007, as the first civil war in the Central African Republic took place within this period.

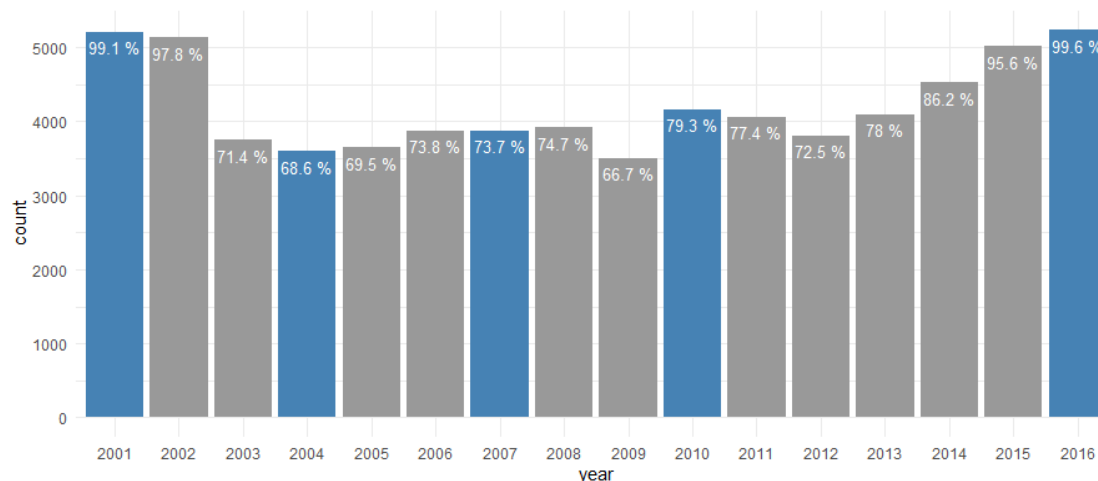


Figure 25: Percentage of available observations per year in the reference area

Discarded sample points

Apart from the points that did not intersect the mask of forest of 2001–2002, some points are removed during the modelling process if they are determined as being converted the first year they are observed (i.e., those sample points could never represent ‘conversion’ during the historical reference period). Therefore, we discarded 691 points for the forest.

Parameterizing α , β and θ

We instigated this fitting under the assumption that the conversion in Chinko exhibits a logistic behaviour over time.

$$F_{DF}(t, n) = \frac{1}{1 + e^{[-\eta(t, \theta)]}}$$

$$\eta = \alpha + \beta t$$

Where

F_{DF} = proportion of cumulative conversion,

η = linear predictor given time and conversion covariates,

t = time,

θ = parameter vector of covariates,

α = combined effects of β and θ at the start of the historic reference period,

β = effect of time on the cumulative proportion of conversion over time.

To estimate the parameters of this logistic regression, we prepared the Appendix 2 of the Annex 5. When fitted to a logistic function, sample conversion data yielded the values for α and β (below) for the PAA (see Figure 26). The parameter θ was not used in this analysis as no external covariates were employed.

$$\hat{\alpha}^{Forest} = -2.45$$

$$\hat{\beta}^{Forest} = 3.25e - 04$$

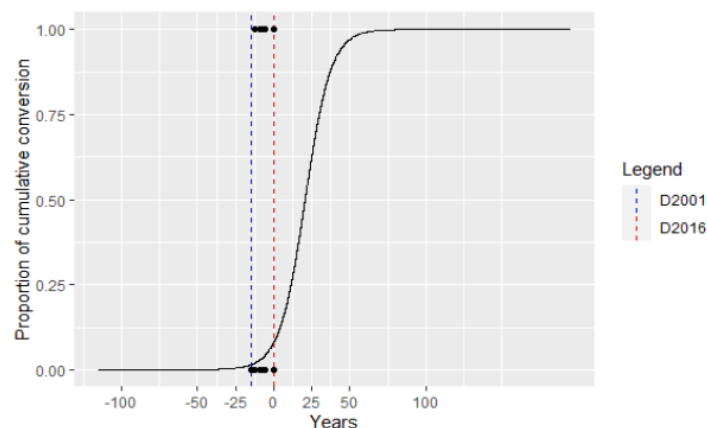


Figure 26: Cumulative conversion of forest, BEM model

Minimizing Uncertainty

Protocol for interpreting land cover state from imagery

To ensure accurate and consistent classification of points we constructed an Image Interpretation protocol (see Appendix 3 from the Annex 5 – Grid analysis). This protocol attempts to describe the classification workflow of the grids, specifically, the imagery used to discern conversion features and seasonal variability of the vegetation. Interpreters received training using this protocol and followed its principles to determine the ecosystem conversion state using derivatives of Landsat imagery, such as composites of false colour, NDVI and BURN ratio index. The ecosystem conversion state is often easily discerned on the image, either by the colour of the feature or patterns in the land cover. In cases where the conversion state could not be readily identified, the context of the surrounding area may be considered, or other sources of imagery such as Google Earth, are used to inform the interpreter of the ecosystem conversion state.

The results of an independent check of the interpretation

According to VM0009 methodology, construction of the BEM model requires the interpretation of samples overlaid on imagery from different years, and should be performed by different people. Each dataset was evaluated using the error module of the Wildlife Works tool. This tool did not present any errors in the interpretation of any of the datasets.

The Wildlife Works tool provides a module to verify possible inconsistencies and unlikely forest state transitions over time. After implementing it in the datasets, the tool produced a table that revealed that the dataset had no errors.

Estimating Uncertainty

Table 13 shows the estimated uncertainty $\hat{\sigma}$, which is used to calculate overall uncertainty in the BEM. This estimation was calculated using the Wildlife works tool.

Table 13: Standard error BEM model

Estimate standard deviation	0.1804532
Number of samples	3438

Please refer to Appendix 2 of Annex 5 – Grid analysis for all uncertainty calculations.

Determining q

The default value of zero was selected, which means a conservative assumption of no days between the onset of degradation and the beginning of conversion.

Determining r_u

r_u parameter is set to position the baseline emissions models relative to the onset rate of conversion immediately adjacent to the project area at the project start date. To attain this parameter, we followed the first method described in the VM0009 methodology: the ratio of converted perimeter at the project start date to the total threatened perimeter along the boundaries of the project area.

$$r_u = \frac{\text{converted perimeter}}{\text{threatened perimeter}}$$

Below we describe how r_u was obtained.

Definition of the converted perimeter of forest

This is the perimeter that was converted before the project start date within 120 m within or outside the project area boundary, measured from 2007 to 2016, i.e., deforestation that occurred within 10 years prior to the project start date. The conversion of the forest was extracted using the Hansen Loss layer between 2007 and 2016. Figure 27 shows, with the cyan line, the converted perimeter that intersects the buffer of 120 m of deforestation (Hansen 2007–2016) and overlaps the forest cover map of 2016.

Definition of the threatened perimeter of forest

We intersected the perimeter that abuts the reference area, plus the north part of the project area that has the highest risk of deforestation due to its proximity, for instance, to settlements, roads and markets for the trading of livestock, with the forest cover map of 2016⁵⁴ to determine the threatened perimeter of forest. The threatened perimeter does not include the converted perimeter (see Figure 27).

⁵⁴ Land cover map 2016, we considered forest as the mixture of OWS and CCF.

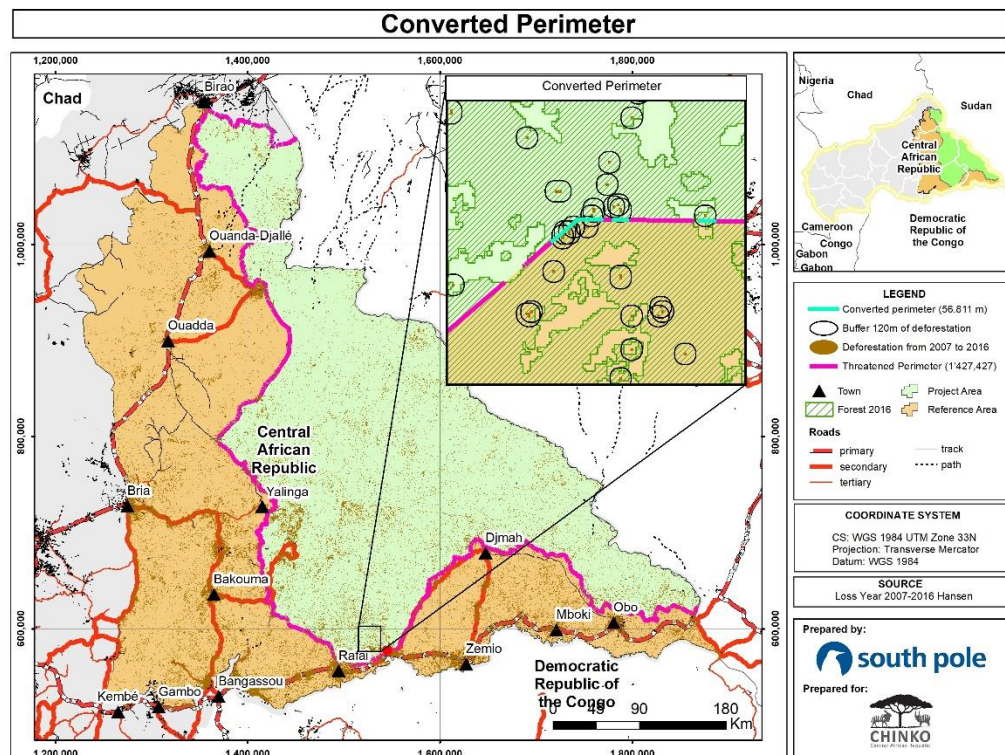


Figure 27: Converted perimeter forest

The results of the GIS process are summarised in Table 14.

Table 14: GIS results to determine Ru value

Parameter	Value
Project area perimeter that abuts the reference area, plus the border in the north (m).	1,647,876.37
Preliminary threatened perimeter (m).	
Project area that abuts the reference area and intersect forest in 2016	1,485,043.34
Converted perimeter (m)	56,811.48
Threatened perimeter (m).	
Threatened perimeter does not include converted perimeter	$= (1,485,043.34 - 56,811.48)$ 1,427,427.92
$\hat{r}_u = \frac{\text{converted perimeter}}{\text{threatened perimeter}} = \frac{56,811.48}{1,427,427.9}$	4%

Soil Emissions Model (SEM)

The default value of 0.2 was used for λ_{SOC} , which means a conservative assumption of carbon in soil decay in tropical climates.

3.1.5 Additionality

The additionality of the project was performed using the tool “VT0001 Tool for Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) project Activities”, Version 3.0. Below are the steps that were followed to assess the additionality and determine the baseline of the project:

- Step 1. Identification of alternative land-use scenarios to the proposed VCS AFOLU project activity.
- Step 2. Investment analysis.
- Step 3. Barrier analysis.
- Step 4. Common practice analysis.

Step 1: Identification of alternative land-use scenarios to the AFOLU project activity

With this step, alternative land-use scenarios were identified for the proposed activities of the project. The baseline scenario was identified, through the following sub-steps:

Sub-step 1a Identification of credible land-use scenarios alternative to the proposed project activity under VCS AFOLU.

Alternative land-use scenarios were identified according to the proposed project activities, which could be defined as a baseline scenario. In addition, historical land uses, trends in the economic sectors, and economic activities that take place in the region of the project area were considered.

Alternative scenario 1: Subsistence agriculture

Although the CAR has more than 5 million ha with an agricultural vocation,⁵⁵ there is no doubt that the country can be considered to be an agriculture-dependent nation, and mechanised agriculture is almost non-existent, even in the pre-crisis situation.⁵⁶ Recently, the adoption of modern agricultural technologies and cultural practices such as irrigation, and fertiliser application, among others, have been very slow but have helped reduce the agricultural area to 8.15% of the total country area (Figure 28). The adoption of these modern practices is hindered by financial constraints such as access to credit (Table 15), as these farmers are smallholder farmers with limited financial support. Moreover, commercial banks, private partners, and insurance companies are not prepared to support these farmers to adopt and apply these technologies. Challenges in the agriculture sector are not only limited to cultivation, but there are also serious concerns when it comes to postharvest storage and marketing. The major cause of food insecurity in the CAR is attributed to the greater percentage of postharvest losses (Senahoun, 2016).

According to the World Bank, agricultural land in the Central African Republic was 8.1 % in 2016, which highlights a decrease from 2009 onwards.

⁵⁵ <http://www.fao.org/countryprofiles/index/en/?iso3=CAF>

⁵⁶ CAR Civil war 2012

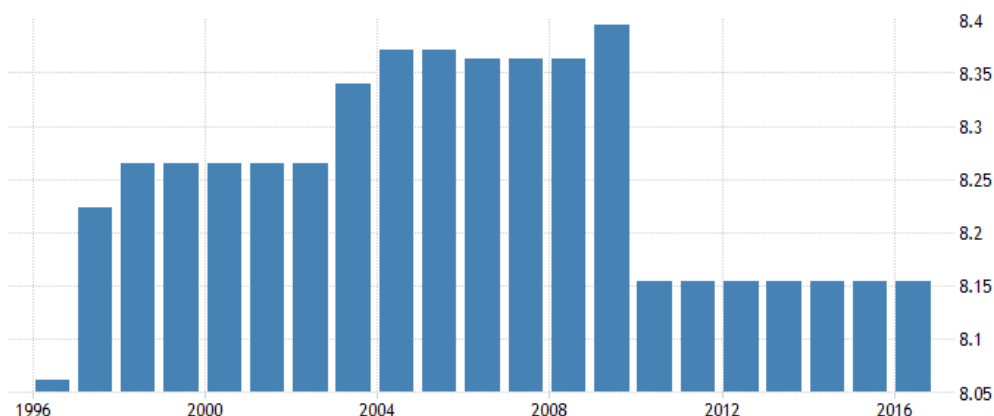


Figure 28: Agricultural land (% of land area) in the Central African Republic, 2016

Source: The World Bank 2016⁵⁷

The agricultural output is dominated by subsistence crops. The FAO estimates that about 2,020,000 hectares (around 3.2% of the total land area) are arable or under permanent crops, with 3,000,000 hectares (4.8% of total land area) being in permanent pasture. Subsistence farmers grow cassava, millet, corn, and bananas for their consumption and sale in domestic markets. Individual small-scale farmers use traditional agricultural methods to produce these crops (The World Bank Group, 2010).

In the prefectures where the project area is located (Mbomou, Huat Mbomou and Haute Kotto), the alimentary insecurity is ranked as a severe deficit by the World Food Program (WFP) (Figure 29):

⁵⁷ <https://data.worldbank.org/indicator/AG.LND.AGRI.ZS?end=2016&locations=CF&start=2016&view=bar>

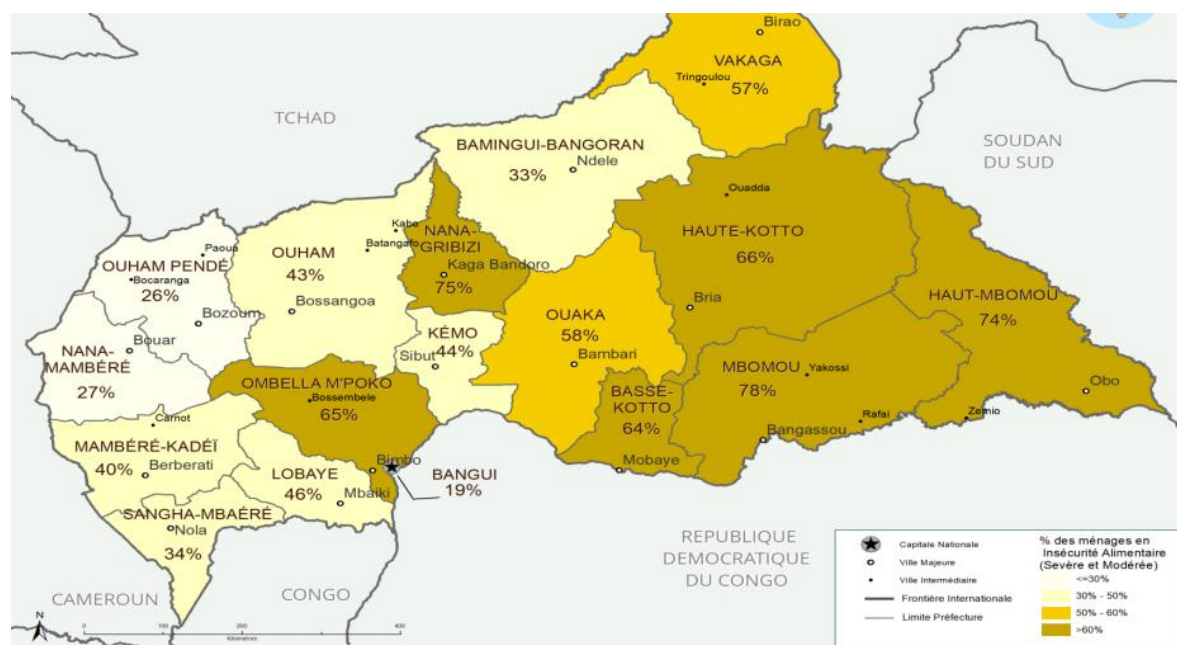


Figure 29: Percentage alimentary insecurity per prefecture

Source: (ENSA, 2019).

In 2018, overall food insecurity increased by 5 percentage points, from 45% to 50% of the population, reflecting a deterioration in comparison to the previous year. The volatility of the security situation, the constant movement of populations, and the weakening of livelihoods highlights the alarming household food security and nutrition situation. However, the level of severe food insecurity has halved from 15% in 2015 to 7% in 2018.

The level of moderate food insecurity has increased from 35% in 2015 to 43% in 2018. There was also a significant increase in the proportion of homes dedicated to the practice of agriculture (92%) in comparison to the last three agricultural seasons (ENSA, 2019).

Evidently, subsistence agriculture is a key activity in the country and in a post-civil-war scenario, without the project development, the project area, which has been uninhabited, will be a key location to perform these activities by communities who have been searching for new opportunities and available land areas.

Alternative scenario 2: Transhumance and pastoralism

Pastoralism

Pastoralism is a branch of agriculture concerned with the raising of livestock. It is animal husbandry: the care, tending, and use of animals such as camels, goats, cattle, yaks, llamas, and sheep, among others. Cattle herders only began arriving in the CAR from the 1920s onwards, with successive waves of pastoralist migrations entering the country from the 1930s. Since then, Central African pastoralism has evolved over four principal phases (International Crisis Group, 2014):

1. An initial period of gradual herder migrations, principally from Cameroon and Nigeria, and the relatively peaceful integration of pastoralist communities into Central African life between the 1930s and 1970s.
2. Further waves of migration, principally from Chad, as well as Sudan, causing the emergence of rising conflict surrounding transhumance between the 1970s and 1980s.

3. A period of rising predation on pastoralist communities with the emergence of the Zaraguina phenomenon in the 1990s to 2000s.⁵⁸

4. The current era of high pastoralist conflict and intense predation on the forestry sector, which began at the start of the crisis in 2013.

The numerous pastoralist groups in the CAR generally come from two broad groups: Arab tribes from Chad and Sudan, and Fulani. The Fulani, or Fula, are ethnic groups that have the largest nomadic pastoral community in the world. Mbororo people are predominantly nomadic communities of Fulani cattle herders. Mbororo, or “Bororo”, translates to “Cattle Fulani”, which means “those who dwell in cattle camps”; they do not live in fixed abodes or practice agriculture, but spend most of their time traveling in search of new pasture for their cattle (Ondoua Ondoua, G., Beodo Moundjim, E., Mambo Marindo, J.C., Jiagho, R., Usongo, L. & Williamson, 2017).

Being the pioneers of CAR’s herder populations, Fulani breeders have traditionally dominated pastoralism and are still important players today. In the 1970s, these pioneer herders were joined by breeders from other minority ethnic groups, particularly Arab (and other Fulani) groups from Chad and Sudan, as well as Hausa and Borno pastoralists in eastern CAR. Whilst Fulani breeders continue to make up the majority of Central African cattle herders, their ownership of cattle has been reduced by insecurity over the few last years (International Crisis Group, 2014).

Transhumance

Transhumance is defined as the practice of moving different types of livestock from one grazing ground to another in search of water and food, and is characterized by regular seasonal movements. The herds generally leave an environment where the pasture has become scarce. This differs from nomadism due to the fact that only a few individuals accompany the flock or herd, while the largest part of the pastoral group remains sedentary. Cross-border or long-distance transhumance predominantly involves cattle, is usually north-south, with herds travelling several hundred kilometres annually (Ondoua Ondoua, G., Beodo Moundjim, E., Mambo Marindo, J.C., Jiagho, R., Usongo, L. & Williamson, 2017).

Transhumance corridors are strips of land reserved for the passage of livestock to access pasture, a water source, or other infrastructures such as a livestock market, vaccination area, or livestock-holding area. These corridors are usually 50–100 m wide, multidirectional, and should be marked by clear signs (e.g. paint marks on trees, planted vegetation, beacons, and plaques). Trails and accommodation are developed to allow animals to pass through farming areas and access to water. Water points, grazing areas, markets, salt licks, fords, resting areas, and passage routes are important elements in cross-border transhumance (Alidou, 2016).

There are several types of transhumance movements that cross the Central African Republic: internal transhumance, which involves around 250,000 pastoralists, mainly consisting of the Fulani and Mbororo ethnic groups, and cross-border transhumance during the dry season, where different species of Chadian or Sudanese grazing animals move through the Chinko area in search of pasture in the north, and sell cattle in south lands (Figure 11).

Before the CAR crisis began at the end of 2012, pastoralism had been a source of violence in rural areas for several years, mainly between pastoralists and farming communities.

⁵⁸ https://www.cairn-int.info/article-E_AFCO_239_0035--the-phenomenon-of-the-zaraguina-in-north.htm#

This crisis has further increased resentment and violence between these groups due to herdsmen's perceived links to ex-Seleka members. Livestock is coveted both by anti-balaka and ex-Seleka militiamen, and pastoralists often respond to cattle thefts with retaliations. The enrolment of vulnerable young herdsmen in armed groups, the crumbling of traditional agro-pastoralist mediation structures, and the yearly influx of pastoralists to the CAR may amplify the ongoing bush warfare (Landers, 2011).

Negative impacts are evident in the project area and its surroundings, as can be seen in Figure 20, Chinko is an area which has a major concentration of cattle. Transhumant pastoralists travel in the savannas and forests which brings them into geographic proximity to members of the LRA.

Clearly, transhumance and pastoralism are major activities in the western part of the country, with each having a direct effect on the project area. Livestock movements from Chad into Central Africa have reorganized land use at the regional level and opened a new settlement front.

Alternative scenario 3: Hunting and Poaching activities

The difference between hunting and poaching comes down to the regulations and laws. While hunting is legal (under some circumstances and requirements), poaching is considered to be illegal killing. The killing of any species that is legally and "fully" protected under national law is, by definition, illegal, regardless of whether the species lives in a protected area or not.

Large-scale commercial poaching by armed groups and militarized poachers is highly organized. According to project area administrators and local communities, these groups engage in poaching for purely economic purposes. In forest areas where there are roads, poachers camp for several weeks, following the movements of wildlife and attacking large mammals such as elephants, bongos, and buffalos.

The main actors involved in poaching in the project area are:

- Non-State armed groups.
- State actors, mainly from Sudan, Chad, and DRC. However, it is difficult to know how official poaching trips from these countries in the Eastern CAR work.
- Armed pastoralists.
- Independent militarized poachers.
- Armed groups.

As outlined by Aebischer et al. (2020), the greatest threat to Chinko comes from transhumance livestock farming between December and May each year: the seasonal movements of transhumant herders in and around Chinko. Fulani cattle herders in Darfur pose a serious poaching problem as some carry weapons. They also kill wildlife, including Giant Eland and Buffalo, and poison predators such as lions. It has also been reported that some Mbororo members obtain firearms from the Seleka. (Ondoua Ondoua, G., Beodo Moundjim, E., Mambo Marindo, J.C., Jiagho, R., Usongo, L. & Williamson, 2017). The magnitude of the poaching threat is evident from the apparent removal of elephants from the Bangassou Forest, which neighbours Chinko.

Alternatively, when African Parks took over the management of the project area, they started to manage the road network and camp sites that had been established and used by a hunting company called CAWA from 2006 to 2014. An area on the western side of the River Mbari had been used by CAWA for official and legal trophy hunting.

Alternative scenario 4: Artisanal gold and diamond mining

Gold and diamonds are mined almost exclusively by artisanal means in the CAR. According to accumulated diamond export figures since 1931, more than 84% of the extraction takes place by hand. Since independence, industrial exploitation has almost completely disappeared (Matthysen & Clarkson, 2013).

On average, households earn 11.6% of their annual income from gold and diamonds, with mining being the most important thing for households in Bili. A Garamba study found that 82% of miners were satisfied with the income they obtained from this activity, which covered the costs of medical care, school expenses, and other basic needs. The other 18% said that their mining income did not meet their needs. Although the average gold price in the area is USD 25–35 per gram, the individual yield of small-scale artisanal mining often falls short of the whole-gram marketing units. None of the people interviewed in the CAR said they earned their income from mining; however, some illegal gold and diamond mining took place within Chinko (Ondoua Ondoua, G., Beodo Moundjim, E., Mambo Marindo, J.C., Jiagho, R., Usongo, L. & Williamson, 2017). Since 2014 the Chinko Project has closed several illegal gold and diamond mines within the area.

Before 2013, minerals were CAR's third-largest contributor to government funds, after agriculture and forestry. Diamond exports represented 11% of tax revenue in 2010, well below the real value of the sector. In addition, around 30% of diamonds left the country illegally. While CAR's diamond production is not as prolific as that of neighbouring DRC, the country ranks among the top producers worldwide for its high quality stones. CAR's gold sector, which is equally promising, is much more informal; especially as 95% of production left the country unofficially before the crisis (Matthysen & Clarkson, 2013).

Central African authorities face two major challenges concerning the minerals sector: addressing its role in insecurity and conflict financing, and combating illicit flows as a means of reducing conflict financing and improving government revenue. By doing this, addressing the problems of capacity, corruption, and the industry's usual opacity will be key to the government's success (International Peace Information Service, 2018).

Mining was a recurrent activity inside the project area prior to the establishment of the project, and since 2014, there have been three main regions within the area where illegal gold and diamond mines have been established. As mining is illegal in the project area under the CAR law, two out of the three mines were closed between 2015–2016. The last illegal mine in the project area was peacefully closed on the 26th November 2020. This reveals that without the project activity, illegal mining would likely continue.

Alternative scenario 5: Project activity without being registered under VCS.

In 2014 Chinko signed a 50-years land management agreement with the government, which was later renewed, including an expansion of the areas to a 25-years mandate in 2020. This agreement is a benefit-sharing initiative among the parties, which guarantees solid support for the development of the project. However, African Parks must invest and make great efforts to develop conservation activities on their own, but due to the reasons mentioned above, it is difficult for private companies to invest in CAR, with large scale foreign investment being perceived as a risky activity.

Outcome from sub-step 1a:

A list of credible alternative land-use scenarios that could have occurred on the land within the project boundary of the VCS AFOLU project:

1. Subsistence agriculture.
2. Transhumance and pastoralism.
3. Hunting and poaching activities.

4. Artisanal gold and diamond mining
5. Project activity without being registered under VCS.

Sub-step 1b. Consistency of credible land-use scenarios with enforced mandatory applicable laws and regulations

To demonstrate the consistency of credible land-use scenarios, according to the tool VT0001, the following steps were applied:

- I. Demonstrate that all land-use scenarios identified in sub-step 1a, follow all mandatory applicable legal and regulatory requirements.
- II. If an alternative does not comply with all mandatory applicable legislation and regulations then show that, based on an examination of current practice in the region, the mandatory law or regulation applies.
- III. Remove from the land-use scenarios identified in sub-step 1a, any land-use scenarios which are not in compliance with applicable mandatory laws and regulations unless it can be shown that these land-use scenarios result from a systematic lack of enforcement of applicable laws and regulations.

The project area is one of the largest protected areas in CAR. As a result, not all of the scenarios listed above are in compliance with all mandatory applicable legal and regulatory requirements. However, it is important to note that the forests are subject to multiple pressures by actors whose activities are overseen by different entities. Therefore, many of the applicable mandatory legal or regulatory frameworks are not systematically enforced, with non-compliance being widespread, as explained below. The proposed project activities are essential to helping enforce the national laws and ensuring that the project area is not deforested or degraded in the future.

Subsistence Agriculture:

In CAR, 80% of the population relies on subsistence agriculture and livestock for their livelihoods. Most cultivated land in the country is used for subsistence farming; farm sizes average between 1.5 and 2 hectares – the amount an average family can cultivate and protect. Most farmers use traditional cultivation methods, which means that productivity is quite low.

Law No. 63 of 1964 recognizes use-rights to land based on the principles of customary law. Customary law is a localized and evolving system, and no comprehensive studies have been published detailing the nature of the system which is operating in CAR. Some general principles of customary law that are common to the central African region, are thought to apply particularly in CAR, for instance, land being held collectively by the lineage or clan and the right of a first clearer of land to use the land. As the commercial value of land has increased, customary landholdings have become increasingly individualized and have been inherited within families.

Most people typically obtain access to rural land through inheritance and allocations from the lineage heads, who control land distribution and allocation under customary law.⁵⁹

⁵⁹ Obtained from: Landlinks, Central African Republic <https://www.land-links.org/country-profile/central-african-republic/#land>

Transhumance and Pastoralism

Both activities are highly regulated in CAR, as can be seen in the table below. However, as explained previously, mandatory legal or regulatory requirements are not systematically enforced because the main agents performing this activity are illegal groups who originate from multiple bordering countries.

Regulation	Object
Law 62/348 of 14 December 1962	Creating and demarcating rural livestock communes from Niem-Yellowa to Bouar; Kouï to Bocaranga; and Gaudrot to Baboua.
Law 64/48 of 2 December 1964	Creating a chamber of agriculture, livestock, water, forests, and hunting.
Law 65/61 of 3 June 1965	Regulating the livestock sector in the Central African Republic.
Law 64/32 and 64/33	Creating and organizing local authorities and administrative districts in the CAR. Section III of Law 64/32 concerns the establishment of rural livestock communes, the appointment of mayors, and the management of municipal councils.
Law 65/85 of 23 December 1965	Creating and demarcating the rural livestock commune between Ouro-Djafoun and Bambari.
Law 94/008 of 20 October 1994	Amending the provisions of Order 86/057, creating and organizing agropastoral action zones in the CAR.
Law 94/009 of 28 October 1994	Creating the Interprofessional Fund for Livestock Development (FIDE).
Law 01/009 of 16 July 2001	Creating the National Order of Central African Veterinarians (OVECA) and the framework for exercising the veterinary profession.
Law 07/015 of 19 June 2007	Creating the Agriculture and Pastoral Development Fund (FDAP).
Order 83/064 amending Law 64/48 of 2 December 1964	Creating a Chamber of Agriculture, Livestock, Water, Forests, and Hunting.
Order 66/55 of 30 August 1966	Creating and demarcating a rural livestock commune from Ewou to Alindao.

Regulation	Object
Order 75/014 of 15 February 1975	Creating the State Company for the Management of Abattoirs (SEGA).
Order 81/033 of 20 July 1981	Creating and demarcating the rural livestock commune from Pombolo to Gambo.
Order 82/025 of 30 June 1982	Creating the Yaloké Commune rural livestock commune in the prefecture of Ombella-Mpoko.
Order 86/045 of 4 August 1986	Conferring the status of a public institution on the National Federation of Central African Livestock Farmers (FNEC).
Order 86/057 of 15 September 1986	Creating and organizing Agropastoral Action Zones (ZAGROPs) in the CAR.
Order 88/005 of 5 January 1988	Creating local authorities and administrative districts.
Order 88/006 of 12 February 1988	Concerning the organization of local authorities and administrative districts.
Decree 75/079 of 15 February 1975	Regulating the professions of cattle traders and butchers, and regulating cattle and meat markets, the slaughter of livestock for food, and the transport of animals.
Decree 82/568 of 30 December 1982	Approving the statutes of the Chamber of Agriculture, Water Resources, Forests, Hunting, Fishing and Tourism.
Decree 86/260 of 15 September 1986	Creating and demarcating two ZAGROPs in the rural livestock commune of Ombella-Mpoko (Djobé, Yérémo).
Decree 89/153 of 18 July 1989	Creating the National Livestock Development Agency (ANDE).
Decree 05/009 of 13 January 2005	Organization and operation of the Ministry of Agriculture and Livestock and defining the minister's powers.

Hunting and poaching activities

The hunting sector in the CAR has been severely affected by the current lack of security. Additionally, cross-border poaching by heavily armed poachers crossing the Chadian and Sudanese borders freely wiped out black and white rhino species in the 1980s and decimated the local elephant population, especially in savanna dominated regions. These factors, together with the increasing prevalence of uncontrolled grazing of domestic animals in protected areas, seriously threaten the viability of this important source of foreign exchange.

A new sport hunting model has been developed: *Projet de zone de chasse villageoise* (ZCV), which aims to involve communities in a more meaningful way in the management of hunting areas. In addition to the revenue generated for the state and communities, sport hunting also contributes to the economy through employment.

Sport hunting is administered by the MEFCP's Division of Wildlife Exploitation (DFAP). DFAP is responsible for issuing hunting permits, driving licenses, hunting areas, and fees as well as managing the various fees involved. The most critical legal text related to hunting in the CAR is the Ordinance N° 84.045 on the protection of wildlife and the regulation of hunting in the country.

With regard to hunting, large-scale commercial poaching by armed groups and militarized poachers are highly organized. According to project area administrators and local communities, these groups engage in poaching for purely economic purposes and even though the activity is illegal, there is a systematic lack of enforcement of applicable laws and regulations.

Artisanal gold and diamond mining

Mining activities are regulated in CAR, as can be seen in the table below.

Regulation	Object
Law 09.005 of 29 April 2009	Stipulates that all mineral resources, in the ground or on the surface, are the property of the Central African State.
Decree 09.126 2009	Stipulates the associated regulations, that the State can consequently grant any person access to these resources.
Mining code	Recognize customary property rights to a certain extent by ordering mining license holders to compensate holders of customary rights for any loss of land due to the mining activities.
2007 Environmental code, law number 07/018	The code mandates the Ministry of Environment and Ecology to supervise environmental issues within the mining sector.

The Kimberley Process

The Kimberley Process Certification Scheme (KPCS) was created in 2003 as a tool to fight the problem of "conflict diamonds". It requires its members to install sufficient controls on their diamond production and

trade to certify them as “conflict-free”. Furthermore, Kimberley Process (KP) members are supposed to comply with the prohibition of trading diamonds with non-member countries. KP claims that its members currently represent about 99.8% of the global production of rough diamonds.

This assistance should be encouraged, as the implementation of such international regulatory frameworks often requires considerable means and technical capacity. It is therefore advisable that international donors consider establishing similar initiatives to assist the Central African government in implementing a range of other international initiatives that relate to the country’s mineral resource sector. The certification scheme includes four main pillars: mineral tracking from the mining site to the point of export; regional mineral tracking through an ICGLR database; independent third-party audits; and independent mineral chain auditing (Matthysen & Clarkson, 2013).

Extractive Industries Transparency Initiative (EITI)

The Extractive Industries Transparency Initiative (EITI) is a voluntary multi-stakeholder initiative which brings together businesses, governments, and nongovernmental organizations (NGOs). To be compliant, member-countries need to publish their revenues from the extractive industries regularly. Whereas companies should publish all payments they have made to governments. In Central Africa, the CAR is currently the only EITI compliant country. It achieved this statute in March 2011. The DRC, Gabon, the Republic of Congo, Cameroon, and Chad are all candidate countries, which means that they implement EITI, but do not yet meet all of the requirements.

The CAR established its EITI structures with the issuance of Presidential Decree No 08.260 of 18 July 2008. In March 2009, the CAR-EITI structure published its first report, which covered 2006. A second EITI report was released in December 2010, which discussed the 2007–2009 period.

The International Conference on the Great Lakes Region (ICGLR)

The International Conference on the Great Lakes Region (ICGLR) is an intergovernmental organization that was established in 2004. It is based on the recognition that political instability and conflicts involving its eleven member states have a considerable regional dimension which require addressing through concerted efforts. In December 2006, the ICGLR adopted the Pact on Security, Stability, and Development in the Great Lakes Region. This pact includes ten legally binding protocols that cover a wide range of regional issues from mutual defence and judicial cooperation, to the illegal exploitation of natural resources.

Even though regulations are in place, artisanal mining is still a common practice, with a systematic lack of enforcement of applicable laws and regulations. Despite the fact that CAR’s artisanal supply chain is quite structured, the informality of this process is quite significant. About 30% of the country’s diamonds and 95% of the country’s gold leaves the country secretly. Furthermore, no more than 5% to 10% of miners are officially registered (Matthysen & Clarkson, 2013).

Project activity without being registered under VCS.

The Central African Republic Government and African Parks signed a new 25-year public-private partnership (PPP) agreement for the management of the Chinko area in 2020, and as a result, this land-use scenario is in compliance with all mandatory applicable legal and regulatory requirements.

Outcome from sub-step 1b

The alternative scenarios are:

1. Subsistence agriculture.
2. Transhumance and pastoralism.
3. Hunting and poaching activities.

4. Artisanal gold and diamond mining.
5. Project activity without being registered under VCS.

Sub-step 1c: Selection of the baseline scenario

The identification of the baseline scenario is done in section 3.1.4 according to the guidelines of the methodology used. The most likely scenario of land use in the absence of the proposed project correspond to those that give continuity to the productive activities predominant in the region of study.

Step 2: Investment analysis

An investment analysis was not carried out, the barrier analysis was performed instead as allowed by the tool.

Step 3: Barriers analysis

Sub-step 3a. Identify barriers that would prevent the implementation of the type of proposed project activity.

A barrier analysis was performed instead of an investment analysis. The barrier analysis demonstrates that there are significant barriers that prevent the type of proposed project activities from being implemented without income from the sale of greenhouse gas (GHG) credits. Similarly, the barriers that have been identified will not prevent alternative land-use scenarios 1, 2, 3 and 4 from occurring.

Economic barriers

Financial risks in the CAR are classified as “Very high – D”.⁶⁰ In rural areas of southeast CAR, a formal economy is almost non-existent, due to the geographic isolation, lack of development, and persistent insecurity in this region; rural communities have few employment or other economic opportunities. This lack of formal economic opportunities also intensifies the exploitation of wildlife and forest resources for commercial purposes. Therefore, instead of eating domestic animals, local people depend heavily on bushmeat (Ondoua Ondoua, G., Beodo Moundjim, E., Mambo Marindo, J.C., Jiagho, R., Usongo, L. & Williamson, 2017).

In addition, the CAR energy sector is in a dire financial condition, which poses serious fiscal risks in the coming years. The energy sector faces high costs due to its excess energy capacity and natural gas supply, which are exacerbating the existing income gap.

In the World Bank’s Doing Business 2020⁶¹ report, the CAR ranked at 144 out of 190 economies for “getting credit”. The category was assessed by looking at (a) movable collateral laws (which is the strength of legal rights of borrowers and lenders in secured transactions) and (b) credit information systems and the sharing of credit information (Mehler, 2013).

Access to credit is a major barrier to the REDD project because it limits financing additional conservation activities, which have a considerable payback period (Table 15).

⁶⁰ <https://www.coface.com/News-Publications/Publications/Country-risk-assessment-map-June-2020>

⁶¹ See <https://www.doingbusiness.org/content/dam/doingBusiness/country/c/central-african-republic/CAF.pdf>

Table 15: Access to credit in the Central African Republic

Indicator	CAR	Sub-Saharan Africa	OECD high income	Best regulatory performance
Strength of legal rights index (0–12)	6	5.1	6.1	12 (5 economies)
Depth of credit information index (0–8)	1	3.9	6.8	8 (53 economies)
Credit registry coverage (% of adults)	5.1	8.3	24.4	100 (2 economies)
Credit bureau coverage (% of adults)	0	11	66.7	100 (14 economies)

Source: (Mehler, 2013 The World Bank's Doing Business 2020 Report, 2019⁶².)

Despite some macroeconomic achievements, several challenges remain, including the high level of debt; the narrow fiscal base; the fragility of the financial system; a relatively low level of reserves; the depreciation of the Central African Franc CAF (the country currency); price fluctuations; and rising transport costs. Furthermore, development gains are not equitably distributed, and there is significant inequality in poverty and nutrition indicators and persistent and systemic gender inequalities (Mehler, 2013).

Therefore, it is important to highlight that African Parks do not receive financial support from the government with the operation relying mainly on donor and self-generate incomes, currently these incomes are not enough and there is a financial gap. There is a risk that transfers to the beneficiaries of social programs, budgetary plans, and financial resources that are intended to help solve inequalities, eliminate poverty, malnutrition, and access to education, all of which will be affected. The role of the Chinko REDD project is to contribute to social development and sustainable use of forest resources through conservation activities.

There is no economic barrier for scenario 1, 2, 3 and 4, they are mainly performed without the need of big financial support and have been occurring prior to the establishment of the project.

Climatic conditions barriers

By analysing the covariant risk in the country, it means that all those events that could cause a reduction in the forest stocks and therefore, in the amount of carbon kept, having a direct influence on the risk of financial return, it is evident that the CAR is a country that has high vulnerability to climatic conditions such as extreme heat and forest fires (Figure 30). In the country the danger of extreme heat is classified as high;⁶³ this means that prolonged exposure to extreme heat is expected to occur at least once in the next five

⁶² <https://www.doingbusiness.org/content/dam/doingBusiness/country/c/central-african-republic/CAF.pdf>

⁶³ See <https://thinkhazard.org/en/report/49-central-african-republic>

years, causing heat stress. The danger of forest fires is also classified as high; this means that there is more than a 50% probability of favourable weather conditions for a major forest fire that could cause loss of life and property each year. As in many African countries, there are no financial institutions that offer products to insure against climate risk, especially for activities with long payback periods such as forest plantations. This means unfavourable events relating to agricultural and forestry activities may discourage investment.

The climatic barrier does not affect the other scenarios from occurring, on the contrary, the degradation caused by activities such as subsistence agriculture is likely to expand without the project scenario under climate change vulnerability projections.

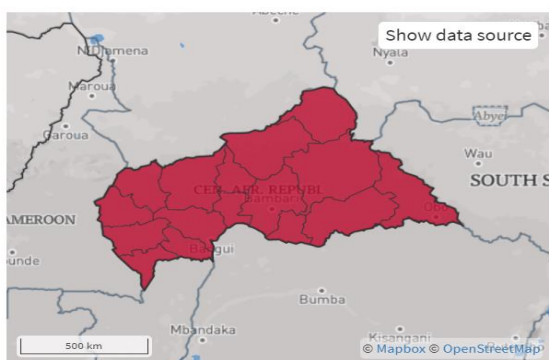


Figure 30: Forest Fire risk in CAR

Source: Think Hazard, 2020.

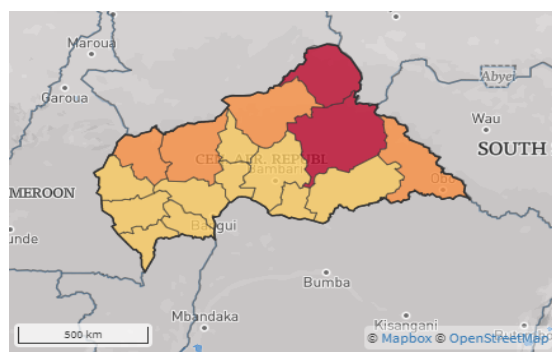


Figure 31: Water scarcity in CAR

Source: Think Hazard, 2020.

Infrastructure and Technologies barriers

Bakouma and Rafai townships have a phone network, however, there are still some issues with the network from time to time, meaning it might not work for several weeks. A small local radio station exists in Raffia but struggles with energy issues, and currently only uses solar panels since the battery is damaged, therefore, the radio station only broadcasts during the day when people are at work and not in the evening when people would be at home and could listen to the radio. The towns of Bakouma and Rafai are linked by a deteriorated dirt road. Few people in this region own a vehicle, therefore, traffic mainly consists of 4x4 vehicles that belong to international NGOs and heavy goods trucks. Motorcycles are a more common means of transport, but fuel costs are high. Most local inhabitants walk or use a bicycle to get to their fields or visit neighbouring villages. There are several airstrips in the Mbomou prefecture, including a landing strip at the Chinko Project's headquarters (Ondoua Ondoua, G., Beodo Moundjim, E., Mambo Marindo, J.C., Jiagho, R., Usongo, L. & Williamson, 2017). Eastern CAR is an undeveloped area where different unexpected burdens occur, that are difficult to foresee.

Land tenure barriers

While customary systems govern land tenure in rural areas, they have been affected by national policy as well as economic and environmental constraints. Whereas lineage chiefs or clan elders once managed the land in most communities, chiefs who are also government liaisons are increasingly becoming intermediaries between the land seekers and users and the lineage or clan elders who are the traditional

land managers. In addition, traditional systems are being altered by the possibilities offered in the national policy such as permanent individual ownership. Traditional systems are constantly changing and adapting to differing political, economic, and environmental conditions. Individual communities may have highly divergent ways of adapting to similar situations (Bruce, 1998).

Although the state established elaborate institutional and administrative machinery to govern land tenure and land administration, it has not been effective. There is lack of networking, with conflicts occurring amongst some of the institutions. The National Land Policy identifies problems and constraints that have bedevilled land administration such as a weak land administration system; general indiscipline in the land market; indeterminate boundaries of stool/skin lands; compulsory acquisition by the government of lands without payment of compensation; inadequate land tenure security due to conflict of interest among and within land-owning groups and the state; land racketeering; and the slow disposal of land cases by the courts (Gossman, 2009).

Simultaneously, an overarching national policy needs to be constructed to define national land-tenure policy in land conflict, sale, rental, and loan situations, as well as between national and traditional systems. A policy of land registration and titling must be confined to modest areas, whereby the government will be able to provide the finances and staff necessary for effectively maintaining such a system. There are no formal arrangements for accessing this resource where it has not been improved, where there has been improvement, those taking part in the improvement in the village, or association levels controlling the land.

Outcome from sub-step 3a:

Identified barrier	Key points
Economic barriers	Access to credit
Climatic conditions barriers	Droughts and fires
Infrastructure and technologies barriers	Lack of management and institutional control.
Land tenure barriers	Main land tenure systems are not sufficient to cover the needs of population towards a sustainable development and correct use of the land.

Sub-step 3b. Show that the identified barriers would not prevent the implementation of at least one of the alternative land use scenarios (except the proposed project activity).

The barrier analysis demonstrates that there are significant barriers that prevent the type of proposed project activities from being implemented without income from the sale of GHG credits. Similarly, none of the barriers identified in Sub-step 3a prevent the implementation of alternative land uses identified in Sub-step 1a, which are land uses currently being performed in the region. Rather, a lack of funding for project activities promotes continued deforestation and degradation in the project area. In addition, barriers have been identified that would perpetuate deforestation and degradation. For example, current land uses would continue without the livelihood improvements offered by the project. The most likely scenarios of land use

in the absence of the proposed project correspond to those that give continuity to the productive activities that are predominant in the region of study (scenarios 1, 2, 3 and 4).

Step 4: Common practice analysis

In CAR, protected areas are not a common practice, few efforts have been made to develop ecologically sustainable livelihood alternatives and no other forest conservation activities of a similar scale to those proposed by the project have been developed, implemented, or are currently underway in the region.

The CCA area is uninhabited and has limited road access and minor infrastructure development. It is surrounded by countryside choked by Central African militia, poachers from DRC and South Sudan, and transhumant pastoralists who mainly come from Chad and Sudan.

In 2014 African Parks signed a land management agreement with the government, which was later renewed, including an expansion of the area to a 25-years mandate in 2020. This reveals the scale of the intended objectives, and gives a solid figure of conservation in the area, because there are needs in the region despite persistent challenges: today local people and wildlife are finding refuge in within the protected area. Key threats have largely been kept out of the CCA, and wildlife is not only stabilizing in numbers but increasing.

The project proponent commits itself to managing the REDD+ project in a socially, environmentally, and economically responsible way according to the principles of African Parks agreements with the government; the project proponent aims to establish a healthy cooperation with the local communities living in the area.

Considering the barriers described in the barrier analysis, projects similar to the proposed project do not yet exist in the CAR and the VCS+CCBS certification is essential in the pioneering protected areas model to ensure a viable stream to overcome these barriers and to substantially reduce the deforestation and degradation in the project area.

The project brings to eastern CAR a long-term conservation, restoration and maintenance of biodiversity, ecosystem functioning which delivers natural resources, ecosystem services for generations of the local population, and governmental economy in the long-term, without depletion, if used in a sustainable way and served as a safety lifeline for surrounding communities, providing a haven for internally displaced people. It is the largest employer in the region and finances the salaries of teachers, doctors, and nurses, creating markets and a conservation-driven economy.

3.1.6 Methodology Deviations

Leakage areas per project accounting area

According to section 5.5 of the methodology, all project activity instances must be identical with regard to common activity-shifting leakage areas as described in the project description, however, taking into account the size of the project and that there are currently areas with no control from African Parks, a methodology deviation in the leakage area is considered. The activity-shifting leakage area was established per each instance. Therefore, the PDR 16 does not have a common leakage area.

This deviation will not negatively impact the conservativeness of the quantification of GHG emission reductions, on the contrary, having separate leakage areas will help to take better decisions regarding the necessity to increase the activities required in a specific area in order to reduce the leakage.

Increase in the number of carbon plots in the project accounting areas and proxy areas

As per a monitoring requirement (MR 98), all plots should be measured for the first verification, and this project applies for a methodology deviation in this requirement. Considering that one of the main

characteristics of a grouped project is the inclusion of new instances during the crediting period, at this moment there are areas within the project area with no control from African Parks. Therefore, the initial delimitation of the carbon plots will not take into consideration these areas, however, once the project instances are expanded, new carbon plots are projected to be located in those areas to have a better coverage of the biomass characteristics.

As explained in the Annex 6 – Climate monitoring plan, the locations for the carbon plots within the current project accounting areas was created considering five prioritised zones. During the first monitoring period it is envisaged to have carbon plots for the first zone, and the other four prioritised zones will be covered in the following years, this guarantees the continuous monitoring of the biomass in the project accounting areas.

3.2 Quantification of GHG Emission Reductions and Removals

3.2.1 Baseline Emissions

The change in baseline emissions for a monitoring period [m] ($E_{B\Delta}^{[m]}$) were calculated using the equation [F.15] of the methodology. This process was applied separately for each project accounting area.

$$E_{B\Delta}^{[m]} = E_B^{[m]} - E_B^{[m-1]} \quad [F.15]$$

This is a function of the cumulative emissions at the beginning ($E_B^{[m-1]}$) and end ($E_B^{[m]}$) of the monitoring period as given by equation [F.16]

$$E_B^{[m]} = E_{B\,BM}^{[m]} + E_{B\,SOC}^{[m]} - C_{B\,SOC}^{[m]} - C_{B\,BGB}^{[m]} - C_{B\,DW}^{[m]} - C_{B\,WP}^{[m]} \quad [F.16]$$

Where

$E_{B\,BM}^{[m]}$ = Cumulative baseline emissions from biomass at the end of the current monitoring period,

$E_{B\,SOC}^{[m]}$ = Cumulative baseline emissions from soil carbon at the end of the current monitoring period,

$C_{B\,SOC}^{[m]}$ = Carbon not decayed in SOC at the end of the current monitoring period,

$C_{B\,BGB}^{[m]}$ = Carbon not decayed in BGB at the end of the current monitoring period,

$C_{B\,DW}^{[m]}$ = Carbon not decayed in DW at the end of the current monitoring period,

$C_{B\,WP}^{[m]}$ = Carbon not decayed in WP at the end of the current monitoring period.

The following sections explain the process followed to obtain the values used in the equation. The project does not include wood products nor deadwood, therefore, these variables of the equation [F.16] were not calculated.

Calculating Baseline Emissions from Biomass

The baseline emissions from biomass were determined based on the baseline type applicable (F-U3) and the carbon pools selected.

The cumulative emissions from biomass ($E_{B\,BM}^{[m]}$) were calculated using equation [F.21]. However, considering that the baseline type is F-U3, the Spatial Algorithm for Biomass, expected in equation [F.24], was used. This algorithm is the most conservative spatial model for depleting carbon stocks.

$$E_{B\ BM}^{[m]} = BEM_{U2,3}(c_{p\ BM}^{[m=0]}, c_{B\ BM}^{[m]}, t^{[m]}, x^{[m]}) \quad [F.21]$$

$$E_{B\ BM}^{[m]} = BEM_{U2,3}(c_{p\ 1\ BM}^{[m=0]}, c_{B\ BM}^{[m]}) \quad [F.24]$$

The BEM for baseline type F-U3 is presented in equation [F.4]

$$BEM_{U2,3}(c_P, c_B, t, x) = \frac{A_{PAA}(c_P - c_B) + \frac{HA_{U2,3}(c_P, c_B)t}{t_{PL}}}{1 + e^{\ln\left(\frac{1}{r_U}\right) - \beta(t+0.5q) - \theta(x)^T}} - HA_{U2,3}(c_P, c_B)$$

where

$$HA_{U2,3}(c_P, c_B) = \frac{A_{PAA}(c_P - c_B)}{1 + e^{\ln\left(\frac{1}{r_U}\right) - \beta(0.5q) - \theta(x_0)^T}} \quad [F.4]$$

Calculating Baseline Emissions from SOC

The baseline emissions from SOC were determined based on the baseline type applicable.

The cumulative emissions from SOC ($E_{B\ SOC}^{[m]}$) were calculated using equation [F.29] to apply the spatial algorithm for SOC.

$$E_{B\ SOC}^{[m]} = SEM_{U2,3}(c_{p\ SOC}^{[m=0]}, c_{B\ SOC}^{[m]}, t^{[m]}, x^{[m]}) \quad [F.28]$$

$$E_{B\ SOC}^{[m]} = SEM_{U2,3}(c_{p\ 1\ SOC}^{[m=0]}, c_{B\ SOC}^{[m]}, t^{[m]}, x^{[m]}) \quad [F.29]$$

The SEM for baseline type F-U3 is presented in equation [F.7]

$$\begin{aligned} SEM_{U2,3}(c_P, c_B, t, x) &= \frac{A_{PAA}(c_P - c_B)}{1 + e^{\ln\left(\frac{1}{r_U}\right) - \beta(t - t_{PAI}) - \theta(x - x_{PAI})^T}} \left[1 \right. \\ &\quad \left. + \frac{t}{t_{PL} + t_{PL} e^{\ln\left(\frac{1}{r_U}\right) - \theta(x_0 - x_{PAI})^T + \beta t_{PAI}}} \right] - \frac{A_{PAA}(c_P - c_B)}{1 + e^{\ln\left(\frac{1}{r_U}\right) - \theta(x_0 - x_{PAI})^T + \beta t_{PAI}}} \end{aligned} \quad [F.7]$$

Calculating Carbon Not Decayed in Below Ground Biomass (BGB)

The carbon non-decayed in BGB was calculated using equation [F.32]

$$C_{B\ BGB}^{[m]} = \sum_{i \in M} DEM_{BGB} \left(E_{B\ \Delta\ BGB}^{[i]}, t, t^{[m]}, t^{[i-1]} \right) \quad [F.32]$$

Calculating Carbon Not Decayed in SOC

The carbon non-decayed in SOC was calculated using equation [F.33] using a default value of 0.2 for λ_{SOC} .

$$C_{B\ SOC}^{[m]} = \sum_{i \in M} DEM_{SOC} \left(E_{B\ \Delta\ SOC}^{[i]}, t^{[m]}, t^{[i-1]} \right) \quad [F.33]$$

3.2.2 Project Emissions

Project emissions for a monitoring period [m] ($E_{P\Delta}^{[m]}$) were calculated using the equation [F.41], this process was applied separately for each project accounting area.

$$E_{P\Delta}^{[m]} = E_{P\Delta BRN}^{[m]} + E_{P\Delta LS}^{[m]} + E_{P\Delta SF}^{[m]} + A_{PAA} \left(c_p^{[m-1]} - c_p^{[m]} \right) - C_{p\Delta WP}^{[m]} \quad [F.41]$$

Where

$E_{P\Delta BRN}^{[m]}$ = Cumulative project emissions due to burning at the end of the current monitoring period,

$E_{P\Delta LS}^{[m]}$ = Cumulative project emissions due to livestock grazing within the project area,

$E_{P\Delta SF}^{[m]}$ = Cumulative project emissions due to the use of synthetic fertilizers within the project area,

A_{PAA} = Area of project accounting area,

$c_p^{[m-1]}$ = Project carbon stocks at the beginning of the current monitoring period,

$c_p^{[m]}$ = Project carbon stocks at the end of the current monitoring period,

$C_{p\Delta WP}^{[m]}$ = Project carbon stocks in wood products at the end of the current monitoring period.

The project does not consider emissions from the use of synthetic fertilizers nor wood products, therefore, the parameters $E_{P\Delta SF}^{[m]}$ and $C_{p\Delta WP}^{[m]}$ are assumed as zero in the equation.

Calculating Emissions from Changes in Project Stocks

The carbon stocks in the project will be measured at least every five years to comply with the methodology requirements.

Calculating Emissions from Burning

The project uses planned early fires in the grassland area during the beginning of the dry season to avoid uncontrolled fires later in the season. The emissions from these burning events are accounted using the equation [F.42], the total area burned is mapped and in order to be conservative it is assumed that all the grass biomass in the area is burned and emitted.

$$E_{P\Delta BRN}^{[m]} = \left(\frac{44}{12} \right) * 0.66 * \sum_{b \in W} r_{CFb} * B_b [m] \quad [F.42]$$

Calculating GHG Emissions from Livestock Grazing

Considering that the baseline scenario in the project is the continuation of pastoralist activities, emissions from livestock grazing are considered when the pastoralist graze within any PAA using equation [F.43] with a small adjustment, the emission factor defined for the livestock population is multiplied by a factor of the number months in which the livestock grazed during the year.

$$E_{P\Delta LS}^{[m]} = \sum_{i \in T} \left(\frac{f_{LSi} * n_{LSi}}{10^3} \right) * 21 \quad [F.43]$$

3.2.3 Leakage

Leakage emissions for a monitoring period [m] ($E_{L\Delta}^{[m]}$) were calculated using equation [F.44] and the cumulative emissions from leakage were calculated using [F.45], this process was applied separately for each project accounting area.

$$E_{L\Delta}^{[m]} = E_L^{[m]} - E_L^{[m-1]} \quad [F.44]$$

$$E_L^{[m]} = E_{L\text{ASF}}^{[m]} + E_{L\text{ASG}}^{[m]} + E_{L\text{ME}}^{[m]} \quad [F.45]$$

Where

$E_{L\text{ASF}}^{[m]}$ = Cumulative emissions from activity-shifting leakage in forested strata at the end of the current monitoring period,

$E_{L\text{ASG}}^{[m]}$ = Cumulative emissions from activity-shifting leakage in native grassland strata at the end of the current monitoring period (not applicable),

$E_{L\text{ME}}^{[m]}$ = Cumulative emissions from market leakage at the end of the current monitoring period.

Leakage Mitigation Strategies

The activities implemented for the project are designated to reduce the conversion resulting from the drivers previously identified, for more details please check section 0 which includes the description of the activities and the Theory of Change.

Estimating Emissions from Activity-Shifting Leakage

Emissions from activity-shifting leakage were calculated using the Leakage Emissions Model (LEM) and following the equation [F.46]. The leakage is estimated by directly observing conversion and/or degradation in the activity leakage area.

$$E_{L\text{ASF}}^{[m]} = LEM\left(c_p^{[m]}, c_b^{[m]}, p_{L\text{DEG}}^{[m]}, t^{[m]}, x^{[m]}\right) \quad [F.46]$$

The LEM is parameterized using equations [F.48].

$$LEM_F(c_p, c_b, p_{L\text{DEG}}, t, x) = p_{L\text{DEG}}^{[m]} A_{AS}(c_p - c_b) - \frac{A_{AS}(c_p - c_b)}{1 + e^{\ln\left(\frac{1}{p_{L\text{DEG}}^{[m]}} - 1\right) - \beta t - \theta(x_0 - x)^T}} \quad [F.48]$$

Delineating the Activity-Shifting Leakage Area

The activity-shifting leakage area was calculated per each instance. To select the activity-shifting leakage area a 20 km buffer was established at the border of each instance, this distance was selected considering the areas more likely to be used by the agent. Considering that from a methodological perspective the activity-shifting leakage area cannot be within the project area, only the areas within the 20 km buffer of each PAA but outside the project area were accounted. These areas are as accessible, if not even more, as the project area and have similar conditions in terms of topography and land cover. However, the project activities will intend to avoid any displacement of the deforestation and/or conversion and instead will lead to a sustainable use of the natural conditions in the long-term. The Figure 32 presents the current leakage area.

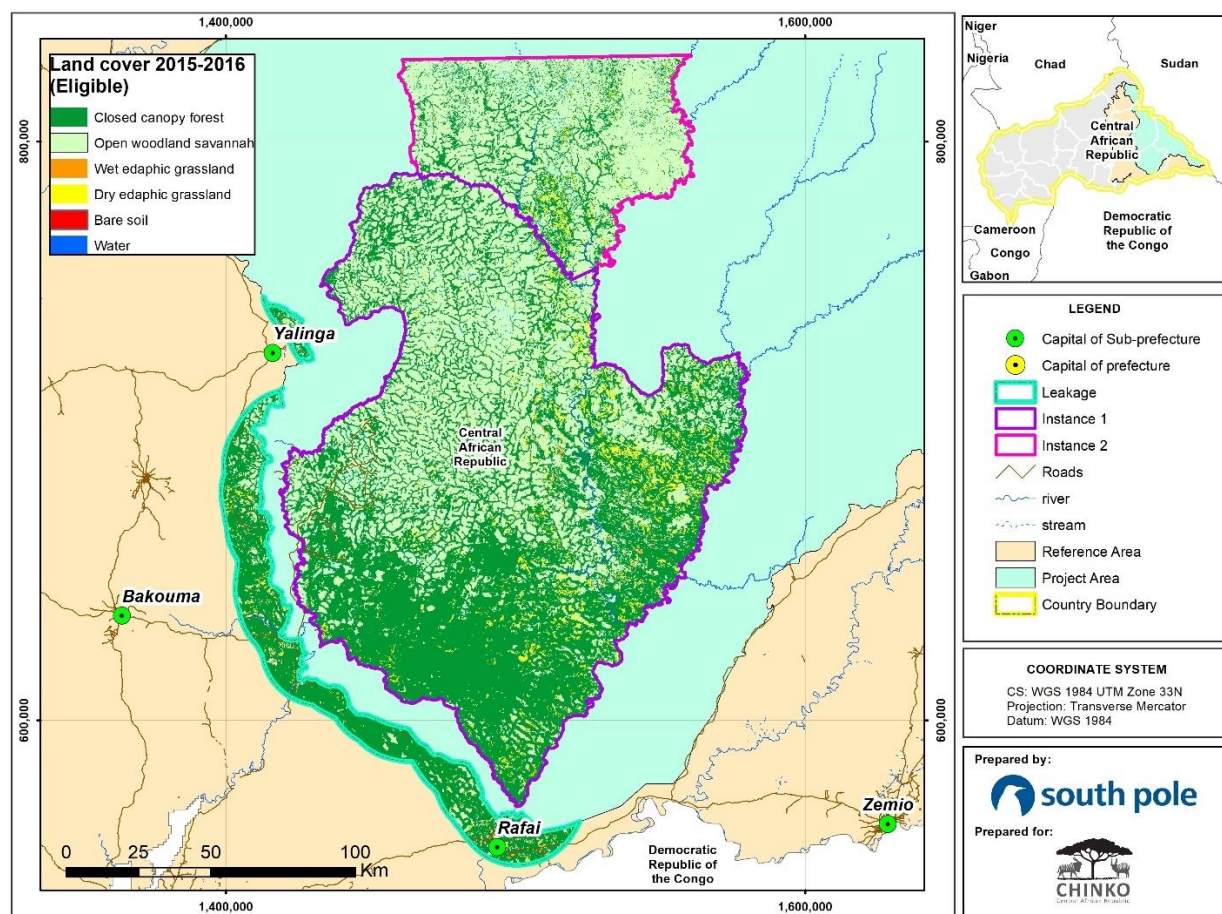


Figure 32: Leakage area

The Leakage Emissions Model

The LEM is presented in equation [F.48].

Estimating Proportion of Degradation

The proportion of degradation in forest was, and will continue to be, calculated following the guideline of the methodology. The process consists in in-situ observation, walking throughout each plot and counting the number of stumps and trees in the plot, for more details see Annex 6.

Determining Emissions from Market Leakage

According to the methodology, market leakage occurs when production of commodities – most likely timber or agricultural products – shifts elsewhere to make up for the lost supply resulting from project activities. However, when the agents and drivers of conversion only use land converted in the baseline for subsistence, no market leakage will occur as a result of the project, and potential leakage, if any, is restricted to the activity-shifting type.

Considering the deforestation/conversion agents present in the area, emissions from market leakage will not be accounted for, and the cumulative emissions from market leakage for every monitoring period will be zero.

3.2.4 Net GHG Emission Reductions and Removals

Quantifying Gross Emissions Reductions

The Gross Emissions Reductions (GERs) for a monitoring period [m] ($E_{\Delta GER}^{[m]}$) and project accounting area were quantified using the equation [F.53]

$$E_{\Delta GER}^{[m]} = E_{B \Delta}^{[m]} - E_{P \Delta}^{[m]} - E_{L \Delta}^{[m]} - E_U^{[m]} \quad [F.53]$$

Where

$E_{B \Delta}^{[m]}$ = Change in baseline emissions,

$E_{P \Delta}^{[m]}$ = Change in project emissions,

$E_{L \Delta}^{[m]}$ = Change in emissions due to leakage,

$E_U^{[m]}$ = Cumulative confidence deduction at the end of the current monitoring period.

Determining Deductions for Uncertainty

The confidence deduction $E_U^{[m]}$ was determined following the equation [F.57], which is a linear combination of weighted standard errors of estimates from baseline emissions models and carbon stock measurements.

$$E_U^{[m]} = E_{B \Delta}^{[m]} \left[\frac{1.64}{E_{B \Delta}^{[m]} + A_{PAA} c_p^{[m]} + A_{PXC} c_B^{[m]}} \sqrt{(U_{EM}^{[m]})^2 + (U_p^{[m]})^2 (U_B^{[m]})^2} - 0.15 \right] \quad [F.57]$$

Determining Reversals

In the event of reversals, the project will follow the VCS procedures for loss events.

Quantifying Net Emissions Reductions for a PAA

The total Net Emissions Reductions (NERs) for a monitoring period [m] were calculated using equation [F.55], which are GERs minus buffer account allocation.

$$E_{\Delta NER}^{[m]} = E_{\Delta GER}^{[m]} - E_{BA}^{[m]} \quad [F.55]$$

Determining Buffer Account Allocation

The allocation of GERs to the buffer account was determined following the AFOLU Non-Permanence Risk Tool, version 4.0. As a result of the process the percentage of GERs allocated in the buffer account is 10%.

Quantifying Net Emissions Reductions across PAAs

The NERs were calculated separately for each PAA and then summed to determine the total NERs in a monitoring period.

Ex-Ante Estimation of NERs

Following the steps presented below the ex-ante estimation of NERs was calculated, the results are presented in the Table 16.

Table 16: Ex-ante Estimation of NERs

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Buffer (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
Sep 2016 – Dec 2016 ⁶⁴	194,251	33,852	0	16,040	144,359
2017	713,769	115,476	0	59,829	538,464
2018	796,339	115,476	0	68,086	612,777
2019	887,346	115,476	0	77,187	694,683
2020	1,174,105	131,849	0	104,226	938,030
2021	1,380,629	138,461	0	124,217	1,117,952
2022	1,531,256	138,461	0	139,280	1,253,516
2023	1,695,078	138,461	0	155,662	1,400,955
2024	1,877,886	138,461	0	173,943	1,565,483
2025	2,064,166	138,461	0	192,571	1,733,135
2026	2,269,056	138,461	0	213,060	1,917,536
Total	14,583,882	1,342,892	0	1,324,099	11,916,890

3.3 Monitoring

3.3.1 Data and Parameters Available at Validation

Data / Parameter	α
Data unit	Unitless
Description	Combined effects of β and θ at the start of the historic reference period
Equations	[F.3], [F.5], [F.6], [F.8]
Source of data	Reference area and historic reference period
Value applied	Not applicable
Justification of choice of	Time and place in which the logistic model is fit

⁶⁴ For a better alignment of future instances, the project calculates the emission reduction in a calendar year basis.

data or description of measurement methods and procedures applied	
Purpose of Data	Not applicable
Comments	Parameter not used in the baseline types identified

Data / Parameter	β
Data unit	Unitless
Description	Effect of time on the cumulative proportion of conversion over time
Equations	[F.2], [F.3], [F.4], [F.5], [F.6], [F.7], [F.8]
Source of data	Reference area and historic reference period
Value applied	3.25×10^{-4}
Justification of choice of data or description of measurement methods and procedures applied	Time and place in which the logistic model is fit
Purpose of Data	Calculation of baseline emissions
Comments	

Data / Parameter	γ
Data unit	Days
Description	Time shift from beginning of historic reference period to project start date
Equations	[F.3], [F.6]
Source of data	Historic reference period
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Time in which the logistic model is fit
Purpose of Data	Not applicable
Comments	Parameter not used

Data / Parameter	θ
Data unit	Unitless
Description	Effect of certain covariates on the cumulative proportion of conversion over time
Equations	[F.2], [F.3], [F.4], [F.5], [F.6], [F.7], [F.8]
Source of data	Reference area and historic reference period
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Time and place in which the logistic model is fit
Purpose of Data	Calculation of baseline emissions
Comments	Parameter not used

Data / Parameter	λ_{SOC}
Data unit	Proportion (unitless)
Description	Exponential soil carbon decay parameter
Equations	[F.9], [F.33]
Source of data	Default values from VCS methodology VM0009, derived from E. Davidson & Ackerman (1993)
Value applied	0.2
Justification of choice of data or description of measurement methods and procedures applied	Default values from VCS methodology VM0009, derived from E. Davidson & Ackerman (1993)
Purpose of Data	Calculation of baseline emissions
Comments	

Data / Parameter	$\hat{\sigma}_{\text{EM}}$
Data unit	Standard deviation (unitless)
Description	The estimated standard deviation of the state observations used to fit the logistic function for the BEM

Equations	[F.12], [F.14], [B.31]
Source of data	Remote sensing image interpretation
Value applied	0.1804532
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Calculation of confidence deduction
Comments	

Data / Parameter	<i>B</i>
Data unit	Set
Description	The set of all selected carbon pools in biomass. Is a subset of <i>C</i>
Equations	[F.17], [F.18], [F.23], [F.50]
Source of data	PDD
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	See section 3.1.3 Gases and carbon pools
Purpose of Data	• Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Comments	

Data / Parameter	<i>C</i>
Data unit	Set
Description	The set of all selected carbon pools
Equations	Not applicable
Source of data	Monitoring records
Value applied	Not applicable

Justification of choice of data or description of measurement methods and procedures applied	See section 3.1.3 Gases and carbon pools
Purpose of Data	• Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Comments	

Data / Parameter	<i>J</i>
Data unit	Set
Description	The set of all observations of conversion. When superscripted with a monitoring period, the conversion observations are taken for leakage analysis
Equations	[F.13]
Source of data	Remote sensing image interpretation or field observations in the leakage area
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Calculation of confidence deduction
Comments	

Data / Parameter	<i>M</i>
Data unit	Set
Description	The set of all monitoring periods
Equations	[F.32], [F.33], [F.36], [F.54], [F.56]
Source of data	Monitoring records
Value applied	Not applicable

Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Not applicable
Comments	

Data / Parameter	T
Data unit	Set
Description	The set of all species/categories of livestock
Equations	[F.43]
Source of data	Monitoring records
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Type of livestock herded in the area
Purpose of Data	Calculation of project emissions
Comments	

Data / Parameter	A_{PAA}						
Data unit	ha						
Description	Area of Project Accounting Areas						
Equations	[F.2], [F.3], [F.4], [F.5], [F.6], [F.7], [F.8], [F.41], [F.52], [F.57]						
Source of data	GIS analysis prior to sampling						
Value applied	<table border="1"> <thead> <tr> <th colspan="2">Instance</th></tr> </thead> <tbody> <tr> <td>1</td><td>1,728,524</td></tr> <tr> <td>2</td><td>440,378</td></tr> </tbody> </table>	Instance		1	1,728,524	2	440,378
Instance							
1	1,728,524						
2	440,378						

Justification of choice of data or description of measurement methods and procedures applied	Areas under control of African Parks with eligible cover
Purpose of Data	• Calculation of baseline emissions • Calculation of project emissions
Comments	

Data / Parameter	A_{px}
Data unit	ha
Description	Area of proxy area for the Project Accounting Areas
Equations	[F.57]
Source of data	GIS analysis prior to sampling
Value applied	483.6
Justification of choice of data or description of measurement methods and procedures applied	See section 3.1.4 Delineating Proxy Areas
Purpose of Data	• Calculation of baseline emissions • Calculation of project emissions
Comments	Mining areas still pending

Data / Parameter	C_{Lp}
Data unit	t CO ₂ e / ha
Description	Carbon stocks in project leakage area
Equations	[F.50]
Source of data	Leakage area sampling
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Considering the deforestation/conversion agents present in the area, emissions from market leakage will not be accounted for and the cumulative emissions from market leakage for every monitoring period will be zero.

Purpose of Data	Not applicable
Comments	Parameter not used

Data / Parameter	f_{LS}^i
Data unit	kg CH ₄ head ⁻¹ yr ⁻¹
Description	Emission factor for the defined livestock population, i
Equations	[F.43]
Source of data	IPCC default values
Value applied	48
Justification of choice of data or description of measurement methods and procedures applied	Obtained directly from IPCC default values, Volume 4 Agriculture, Forestry and Other Land Use, Chapter 10 Emissions from livestock and manure management, Table 10.11 – African cattle low productivity systems
Purpose of Data	Calculation of project emissions
Comments	In the calculations of the project emissions the value was multiplied by a discount factor corresponding to the approximate amount of time the cattle stay in the Project Accounting Areas.

Data / Parameter	m
Data unit	t CO ₂ e / yr
Description	Average carbon in merchantable trees cut each year as a result of legally sanctioned commercial logging
Equations	[F.2]
Source of data	Timber harvest plans or measurement of carbon stocks in merchantable trees in the project accounting area
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Not applicable
Comments	Parameter not used

Data / Parameter	n_d
Data unit	Not applicable
Description	Number of spatial points in the reference area
Equations	[F.14]
Source of data	Remote sensing image interpretation
Value applied	17,205
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Calculation of confidence deduction
Comments	

Data / Parameter	o_i
Data unit	Binary
Description	State observation for the i^{th} sample point in the reference area
Equations	[F.13]
Source of data	Remote sensing image interpretation
Value applied	Various
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Calculation of confidence deduction
Comments	

Data / Parameter	P_{LME}
Data unit	Unitless
Description	Portion of leakage related to market
Equations	[F.51]

Source of data	8.3.3
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Considering the deforestation/conversion agents present in the area, emissions from market leakage will not be accounted for and the cumulative emissions from market leakage for every monitoring period will be zero.
Purpose of Data	Not applicable
Comments	Parameter not used

Data / Parameter	q
Data unit	Days
Description	Lag between start of degradation and conversion
Equations	[F.3], [F.4], [F.5]
Source of data	Default value
Value applied	0
Justification of choice of data or description of measurement methods and procedures applied	It is always conservative to set this parameter equal to zero and any other value must be justified
Purpose of Data	Calculation of baseline emissions
Comments	

Data / Parameter	$r_{CF\ b}$
Data unit	Unitless
Description	Carbon fraction of biomass for burned wood or herbaceous material b
Equations	[F.42]
Source of data	Literature estimates or direct measurement
Value applied	0.47

Justification of choice of data or description of measurement methods and procedures applied	IPCC 2006 default values, Chapter 4, Table 4.3
Purpose of Data	Calculation of project emissions
Comments	

Data / Parameter	r_{RS}
Data unit	Unitless
Description	Expansion factor for above-ground biomass to below-ground biomass (root/shoot ratio)
Equations	[F.30]
Source of data	Reviewed literature, allometry, or IPCC default values
Value applied	0.232
Justification of choice of data or description of measurement methods and procedures applied	IPCC 2019 Refinement, Chapter 4, Table 4.4
Purpose of Data	Calculation of project emissions
Comments	

Data / Parameter	r_U
Data unit	Unitless
Description	Onset proportion of conversion immediately adjacent to project area
Equations	[F.4]
Source of data	GIS analysis and image interpretation
Value applied	4%
Justification of choice of data or description of measurement methods and procedures applied	Positions the baseline emissions models relative to the instantaneous rate of conversion
Purpose of Data	Calculation of baseline emissions

Comments	
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Data / Parameter	t
Data unit	Days
Description	Time since project start date
Equations	[F.2], [F.3], [F.4], [F.5], [F.6], [F.7], [F.8], [F.10]
Source of data	Monitoring records
Value applied	Various
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Calculation of baseline emissions
Comments	

Data / Parameter	t_i
Data unit	Days
Description	The point in time of the observation made at point i
Equations	[F.11], [A.6]
Source of data	Remote sensing image interpretation
Value applied	Various
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Calculation of confidence deduction
Comments	

Data / Parameter	t_{PA}
Data unit	Days
Description	Time prior to the project start date when the primary agent began commercial logging in the project accounting area

Equations	[F.1], [F.2], [F.3], [F.6]
Source of data	Harvest plans prepared for the project accounting area, or by public record
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Not applicable
Comments	Parameter not used

Data / Parameter	t_m
Data unit	Days
Description	Length of project or logging in baseline scenario
Equations	[F.1]
Source of data	PD
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Not applicable
Comments	Parameter not used

Data / Parameter	t_{PL}
Data unit	Days
Description	Length of project crediting period
Equations	[F.5]
Source of data	See section 3.1.3 Temporal boundaries
Value applied	10,438

Justification of choice of data or description of measurement methods and procedures applied	See section 2.1.14
Purpose of Data	• Calculation of baseline emissions • Calculation of project emissions
Comments	

Data / Parameter	t_{PAI}						
Data unit	Days						
Description	Number of days after the project start date for the start of a project activity instance in a grouped project						
Equations	[F.2], [F.3], [F.4], [F.5], [F.6], [F.7], [F.8]						
Source of data	See section 3.1.3 Temporal boundaries						
Value applied	<table border="1"> <thead> <tr> <th>Instance</th><th>Value</th></tr> </thead> <tbody> <tr> <td>1</td><td>0</td></tr> <tr> <td>2</td><td>1,308</td></tr> </tbody> </table>	Instance	Value	1	0	2	1,308
Instance	Value						
1	0						
2	1,308						
Justification of choice of data or description of measurement methods and procedures applied	See section 2.1.13						
Purpose of Data	Calculation of baseline emissions						
Comments							

Data / Parameter	t_{SA}
Data unit	Days
Description	Arrival time of secondary agents after start of commercial logging
Equations	[F.2]
Source of data	Participatory rural appraisal, or expert knowledge
Value applied	Not applicable

Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Not applicable
Comments	Parameter not used

Data / Parameter	w_i
Data unit	Unitless
Description	Weight applied to the i^{th} sample point in the Project Accounting Areas reference area
Equations	[A.6], [F.13]
Source of data	Remote sensing image interpretation
Value applied	Various
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Calculation of confidence deduction
Comments	

Data / Parameter	x
Data unit	Unitless
Description	Covariate values
Equations	[F.2], [F.3], [F.4], [F.5], [F.6], [F.7], [F.8]
Source of data	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Not applicable

Purpose of Data	Not applicable
Comments	Parameter not used

Data / Parameter	x_i
Data unit	Geographic coordinates
Description	Latitude of the i^{th} sample point in the Project Accounting Areas reference area
Equations	[F.11], [A.6]
Source of data	Remote sensing image interpretation
Value applied	Various
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Calculation of confidence deduction
Comments	

Data / Parameter	x_0
Data unit	Unitless
Description	Covariate values as of the project start date
Equations	[F.4], [F.5], [F.6], [F.7], [F.8]
Source of data	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Not applicable
Comments	Parameter not used

Data / Parameter	x_{SA}
Data unit	Unitless
Description	Covariate values as of the arrival of the secondary agents
Equations	[F.2]
Source of data	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Not applicable
Comments	Parameter not used

Data / Parameter	y_i
Data unit	Geographic coordinates
Description	Longitude of the i^{th} sample point in the Project Accounting Areas reference area
Equations	[F.11], [A.6]
Source of data	Remote sensing image interpretation
Value applied	Various
Justification of choice of data or description of measurement methods and procedures applied	Not applicable
Purpose of Data	Calculation of confidence deduction
Comments	

3.3.2 Data and Parameters Monitored

Data / Parameter	$w^{[m]}$
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Data unit	Set
Description	The set of all burned wood or herbaceous material
Equations	[F.42]
Source of data	Monitoring records
Description of measurement methods and procedures to be applied	Not applicable
Frequency of monitoring/recording	Every monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of project emissions
Calculation method	Not applicable
Comments	

Data / Parameter	$A_{B \Delta PAA}^{[m]}$
Data unit	ha
Description	Area of avoided conversion
Equations	[F.52]
Source of data	Generated from equation
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Section 8.3.3.4
Frequency of monitoring/recording	Every monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records

Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$A_{P1}^{[m=0]}$		
Data unit	ha		
Description	Area of Project Accounting Areas stratum 1 prior to first verification event		
Equations	[F.24]		
Source of data	GIS analysis prior to sampling		
Description of measurement methods and procedures to be applied	GIS analysis of best available data		
Frequency of monitoring/recording	First monitoring period		
Value applied	Instance	Value	
	1	692,827	
	2	323,920	
Monitoring equipment	Remote Sensing data GIS Software		
QA/QC procedures to be applied	Annex 7 – QA/QC procedure		
Purpose of data	Calculation of baseline emissions		
Calculation method	Eligible area, see Annex 3		
Comments	Per instance		

Data / Parameter	$A_{P2}^{[m=0]}$		
Data unit	ha		
Description	Area of Project Accounting Areas stratum 2 prior to first verification event		
Equations	[F.24]		

Source of data	GIS analysis prior to sampling		
Description of measurement methods and procedures to be applied	GIS analysis of best available data		
Frequency of monitoring/recording	First monitoring period		
Value applied		Instance	Value
		1	1,035,697
		2	116,458
Monitoring equipment	Remote Sensing data GIS Software		
QA/QC procedures to be applied	Annex 7 – QA/QC procedure		
Purpose of data	Calculation of baseline emissions		
Calculation method	Eligible area, see Annex 3		
Comments	Per instance		

Data / Parameter	$B_b^{[m]}$		
Data unit	Tonnes		
Description	Biomass in burned wood or herbaceous material <i>b</i>		
Equations	[F.42]		
Source of data	Measurements of biomass		
Description of measurement methods and procedures to be applied	Carbon plots sampling		
Frequency of monitoring/recording	Every monitoring period		
Value applied		Instance	Value
		1	79,371
		2	15,777

Monitoring equipment	See annex 6
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of project emissions
Calculation method	Carbon plots sampling
Comments	Weighted average of DEG and WEG

Data / Parameter	$c_B^{[m]}$				
Data unit	tCO ₂ e / ha				
Description	Baseline carbon stocks at the end of the current monitoring period for the Project Accounting Areas				
Equations	[F.2], [F.3], [F.4], [F.5], [F.6], [F.7], [F.57]				
Source of data	Proxy area sampling				
Description of measurement methods and procedures to be applied	Carbon plots sampling				
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)				
Value applied	<table border="1"> <tr> <td>$c_{B\ BM}^{[m]} =$</td><td>48.6</td></tr> <tr> <td>$c_{B\ SOC}^{[m]} =$</td><td>243.99</td></tr> </table>	$c_{B\ BM}^{[m]} =$	48.6	$c_{B\ SOC}^{[m]} =$	243.99
$c_{B\ BM}^{[m]} =$	48.6				
$c_{B\ SOC}^{[m]} =$	243.99				
Monitoring equipment	See Annex 6				
QA/QC procedures to be applied	See Annex 6				
Purpose of data	- Calculation of baseline emissions - Calculation of confidence deduction				
Calculation method	Equation [B.33]				
Comments					

Data / Parameter	$C_{B\ BGB}^{[m]}$						
Data unit	tCO2e						
Description	Carbon not decayed in BGB at the end of the current monitoring period for the Project Accounting Areas						
Equations	[F.16]						
Source of data	Proxy area sampling						
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Section 8.1.4						
Frequency of monitoring/recording	Every monitoring period						
Value applied	<table border="1"> <thead> <tr> <th colspan="2">Instance</th></tr> </thead> <tbody> <tr> <td>1</td><td>748,751</td></tr> <tr> <td>2</td><td>209,474</td></tr> </tbody> </table>	Instance		1	748,751	2	209,474
Instance							
1	748,751						
2	209,474						
Monitoring equipment	Not applicable						
QA/QC procedures to be applied	Review of emissions reductions calculations						
Purpose of data	Calculation of baseline emissions						
Calculation method	Equations [F.10] and [F.32]						
Comments	Per instance, value for 31/12/20						

Data / Parameter	$C_{B\ DW}^{[m]}$
Data unit	tCO2e
Description	Carbon not decayed in DW at the end of the current monitoring period
Equations	[F.16]
Source of data	Proxy area sampling

Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Section 8.1.3
Frequency of monitoring/recording	Every monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$C_{B\ SOC}^{[m]}$			
Data unit	tCO2e			
Description	Carbon not decayed in SOC at the end of the current monitoring period for the Project Accounting Areas			
Equations	[F.16]			
Source of data	Proxy area sampling			
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Section 8.1.5			
Frequency of monitoring/recording	Every monitoring period			
Value applied		Instance		
	1	694,158.5		
	2	129,763.0		
Monitoring equipment	Not applicable			
QA/QC procedures to be applied	Review of emissions reductions calculations			
Purpose of data	Calculation of baseline emissions			

Calculation method	Equations [F.9] and [F.33]
Comments	Per instance

Data / Parameter	$C_{B\ WP}^{[m]}$
Data unit	tCO ₂ e
Description	Carbon not decayed in WP at the end of the current monitoring period
Equations	[F.16]
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix C
Frequency of monitoring/recording	Every monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$C_{B\ AGMT}^{[m]}$
Data unit	tCO ₂ e / ha
Description	Baseline carbon stocks in above-ground merchantable trees at the end of the current monitoring period
Equations	[F.37], [F.38], [F.39], [F.40]
Source of data	Proxy area sampling

Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2.1
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$C_{B\ BGMT}^{[m]}$
Data unit	tCO ₂ e / ha
Description	Baseline carbon stocks in below-ground merchantable trees at the end of the current monitoring period
Equations	[F.37], [F.38], [F.39], [F.40]
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2.1
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$C_p^{[m=0]}_{AGMT}$
Data unit	tCO2e
Description	Project carbon stocks in above-ground merchantable trees at project start
Equations	[F.1]
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2.1
Frequency of monitoring/recording	First monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$C_p^{[m=0]}_{BGMT}$
Data unit	tCO2e
Description	Project carbon stocks in below-ground merchantable trees at project start
Equations	[F.1]
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2.3
Frequency of monitoring/recording	First monitoring period

Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$C_{B\ b}^{[m]}$
Data unit	tCO ₂ e / ha
Description	Baseline scenario average carbon stock in selected carbon pools for the Project Accounting Areas
Equations	[F.18] [F.24]
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	48.6
Monitoring equipment	See Annex 6
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Equation [B.33]
Comments	

Data / Parameter	$C_{B\ BM}^{[m]}$
Data unit	tCO ₂ e / ha

Description	Baseline carbon stocks in biomass at the end of the current monitoring period for the Project Accounting Areas
Equations	[F.19], [F.20], [F.21], [F.24], [F.52]
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	48.6
Monitoring equipment	See Annex 6
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Equation [F.18]
Comments	

Data / Parameter	$C_B^{[m]} SOC$
Data unit	tCO ₂ e / ha
Description	Baseline soil carbon stocks at the end of the current monitoring period for the Project Accounting Areas
Equations	[F.25], [F.27], [F.28]
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2.6
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	243,99
Monitoring equipment	See Annex 6

QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculations of baseline emissions
Calculation method	Equation [F.33]
Comments	

Data / Parameter	$c_p^{[m]}$											
Data unit	tCO2e / ha											
Description	Project carbon stocks at the end of the current monitoring period for the Project Accounting Areas											
Equations	[F.41], [F.57]											
Source of data	Project accounting area sampling											
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.1.5											
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)											
Value applied	<table><tr><td></td><th>Instance 1</th><th>Instance 2</th></tr><tr><td>$c_{p\ BM}^{[m]} =$</td><td>521.14</td><td>315.88</td></tr><tr><td>$c_{p\ SOC}^{[m]} =$</td><td>240.69</td><td>240.69</td></tr></table>				Instance 1	Instance 2	$c_{p\ BM}^{[m]} =$	521.14	315.88	$c_{p\ SOC}^{[m]} =$	240.69	240.69
	Instance 1	Instance 2										
$c_{p\ BM}^{[m]} =$	521.14	315.88										
$c_{p\ SOC}^{[m]} =$	240.69	240.69										
Monitoring equipment	See Annex 6											
QA/QC procedures to be applied	Review of monitoring records											
Purpose of data	• Calculation of baseline emissions • Calculation of project emissions											
Calculation method	Equation [B.33]											
Comments												

Data / Parameter	$c_p^{[m-1]}$
Data unit	tCO ₂ e / ha
Description	Project carbon stocks at the beginning of the current monitoring period for the Project Accounting Areas
Equations	[F.41]
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.1.5
Frequency of monitoring/recording	Prior monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Already reviewed
Purpose of data	• Calculation of baseline emissions • Calculation of project emissions
Calculation method	Equation [B.33]
Comments	

Data / Parameter	$c_p^{[m=0]}$
Data unit	tCO ₂ e / ha
Description	Project carbon stocks prior to first verification event for the Project Accounting Areas
Equations	[F.7]
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.1.5

Frequency of monitoring/recording	First monitoring period		
Value applied			
		Instance 1	Instance 2
	$c_{p\ BM}^{[m]} =$	521.14	315.88
	$c_{p\ SOC}^{[m]} =$	240.69	240.69
Monitoring equipment	See Annex 6		
QA/QC procedures to be applied	Review of monitoring records		
Purpose of data	• Calculation of baseline emissions • Calculation of project emissions		
Calculation method	Equation [B.33]		
Comments			

Data / Parameter	$c_{p\ 1\ BM}^{[m=0]}$
Data unit	tCO ₂ e / ha
Description	Project carbon stocks in biomass in stratum 1 prior to first verification event for the Project Accounting Areas
Equations	[F.24]
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2
Frequency of monitoring/recording	First monitoring period
Value applied	153.71
Monitoring equipment	See Annex 6
QA/QC procedures to be applied	Review of monitoring records

Purpose of data	Calculation of baseline emissions
Calculation method	Average of plot measurements
Comments	

Data / Parameter	$C_p^{[m=0]}_{2\ BM}$
Data unit	tCO ₂ e / ha
Description	Project carbon stocks in biomass in stratum 2 prior to first verification event for the Project Accounting Areas
Equations	[F.24]
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2
Frequency of monitoring/recording	First monitoring period
Value applied	766.93
Monitoring equipment	See Annex 6
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Average of plot measurements
Comments	

Data / Parameter	$C_p^{[m=0]}_{AGMT}$
Data unit	tCO ₂ e / ha
Description	Project carbon stocks in above-ground merchantable trees prior to first verification event
Equations	[F.37], [F.38], [F.39], [F.40]

Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2.1
Frequency of monitoring/recording	First monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$C_p^{[m=0]}_{BM}$						
Data unit	tCO2e						
Description	Project carbon stocks in biomass prior to first verification event for the Project Accounting Areas						
Equations	[F.19], [F.20], [F.21], [F.52]						
Source of data	Project accounting area sampling						
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2						
Frequency of monitoring/recording	First monitoring period						
Value applied	<table border="1"> <thead> <tr> <th colspan="2">Instance</th></tr> </thead> <tbody> <tr> <td>1</td><td>867,123,175</td></tr> <tr> <td>2</td><td>123,360,290</td></tr> </tbody> </table>	Instance		1	867,123,175	2	123,360,290
Instance							
1	867,123,175						
2	123,360,290						
Monitoring equipment	See Annex 6						

QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Equation [F.17]
Comments	

Data / Parameter	$C_{p\ b}^{[m]}$						
Data unit	tCO ₂ e / ha						
Description	Average carbon in biomass in the Project Accounting Areas						
Equations	[F.17]						
Source of data	Project accounting area sampling						
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2						
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)						
Value applied	<table border="1"> <thead> <tr> <th colspan="2">Instance</th></tr> </thead> <tbody> <tr> <td>1</td><td>521.14</td></tr> <tr> <td>2</td><td>315.88</td></tr> </tbody> </table>	Instance		1	521.14	2	315.88
Instance							
1	521.14						
2	315.88						
Monitoring equipment	See Annex 6						
QA/QC procedures to be applied	Review of monitoring records						
Purpose of data	Calculation of baseline emissions						
Calculation method	Equation [B.33]						
Comments							

Data / Parameter	$C_{p\ 1\ b}^{[m]}$
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Data unit	tCO ₂ e / ha
Description	Average carbon in biomass for Project Accounting Areas, stratum 1
Equations	[F.23]
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	153.71
Monitoring equipment	See Annex 6
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Average carbon in the plots
Comments	

Data / Parameter	$C_p^{[m]} 2 b$
Data unit	tCO ₂ e / ha
Description	Average carbon in biomass for Project Accounting Areas, stratum 2
Equations	[F.23]
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	766.93

Monitoring equipment	See Annex 6
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Average carbon in the plots
Comments	

Data / Parameter	$c_p^{[m=0]}_{soc}$
Data unit	tCO ₂ e / ha
Description	Project soil carbon stocks prior to first verification event in the Project Accounting Areas
Equations	[F.25], [F.27], [F.28]
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2.6
Frequency of monitoring/recording	First monitoring period
Value applied	240.69
Monitoring equipment	See Annex 6
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Average carbon in the plots
Comments	

Data / Parameter	$c_p^{[m]}_{\Delta SWP}$
Data unit	tCO ₂ e
Description	Project carbon stocks in wood products at the end of the current monitoring period

Equations	[F.41]
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix C
Frequency of monitoring/recording	Every monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$E_{\Delta GER}^{[m]}$			
Data unit	tCO2e			
Description	GERs for the current monitoring period			
Equations	[F.55], [F.57]			
Source of data	Area measurements			
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.4.1			
Frequency of monitoring/recording	Every monitoring period			
Value applied		Instance		
		1	3,086,186	
		2	167,495	
		Total	3,253,681	
Monitoring equipment	Not applicable			

QA/QC procedures to be applied	Review of GER calculations
Purpose of data	Quantification of Gross Emissions Reduction
Calculation method	Equation [F.53]
Comments	Per Project Accounting Area, value for 31/12/20

Data / Parameter	$E_{\Delta GER}^{[i]}$			
Data unit	tCO2e			
Description	GERs for monitoring period i			
Equations	[F.54]			
Source of data	Area measurements			
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.4.1			
Frequency of monitoring/recording	Prior monitoring period			
Value applied		Instance		
		1	3,086,186	
		2	167,495	
		Total	3,253,681	
Monitoring equipment	Not applicable			
QA/QC procedures to be applied	Review of GER calculations			
Purpose of data	Quantification of Gross Emissions Reduction			
Calculation method	Equation [F.53]			
Comments	Per Project Accounting Area, value for 31/12/20			

Data / Parameter	$E_{\Delta NER}^{[i]}$		
Data unit	tCO ₂ e		
Description	NERs for monitoring period i		

Equations	[F.56]			
Source of data	Area measurements			
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.4.3			
Frequency of monitoring/recording	Prior monitoring period			
Value applied		Instance		
		1	2,777,568	
		2	150,745	
		Total	2,928,313	
Monitoring equipment	Not applicable			
QA/QC procedures to be applied	Review of NER calculations			
Purpose of data	Quantification of Net Emissions Reduction			
Calculation method	Equation [F.55]			
Comments	Per Project Accounting Area, summed to determine the total NERs, value for 31/12/20			

Data / Parameter	$E_B^{[m]}$
Data unit	tCO ₂ e
Description	Cumulative baseline emissions at the end of the current monitoring period
Equations	[F.15]
Source of data	Proxy area measurements
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.1
Frequency of monitoring/recording	Every monitoring period

Value applied		Instance		
	1	3,581,942		
	2	917,142		
	Total	4,499,084		
Monitoring equipment	Not applicable			
QA/QC procedures to be applied	Review of monitoring records			
Purpose of data	Calculation of baseline emissions			
Calculation method	Equation [F.16]			
Comments	Per Project Accounting Area, value for 31/12/20			

Data / Parameter	$E_B^{[m-1]}$
Data unit	tCO ₂ e
Description	Cumulative baseline emissions at the beginning of the current monitoring period
Equations	[F.15]
Source of data	Proxy area measurements
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.1
Frequency of monitoring/recording	Prior monitoring period
Value applied	0
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Equation [F.16]
Comments	Per Project Accounting Area

Data / Parameter	$E_{B \Delta}^{[m]}$			
Data unit	tCO2e			
Description	Change in baseline emissions			
Equations	[F.9], [F.10], [F.14], [F.53], [F.57]			
Source of data	Proxy area measurements			
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.1			
Frequency of monitoring/recording	Every monitoring period			
Value applied		Instance		
		1	3,581,942	
		2	183,868	
		Total	3,765,628	
Monitoring equipment	Not applicable			
QA/QC procedures to be applied	Review of monitoring records			
Purpose of data	Calculation of baseline emissions			
Calculation method	Equation [F.15]			
Comments	Per Project Accounting Area, value for 31/12/20			

Data / Parameter	$E_{B \Delta BGB}^{[i]}$		
Data unit	tCO2e		
Description	Change in baseline emissions from below-ground biomass during monitoring period i		
Equations	[F.32]		
Source of data	Monitoring the proxy area		
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2.3		

Frequency of monitoring/recording	Prior monitoring period		
Value applied		Instance	
		1	229,001
		2	42,373
		Total	271,375
Monitoring equipment	Not applicable		
QA/QC procedures to be applied	Review of monitoring records		
Purpose of data	Calculation of baseline emissions		
Calculation method	Equation [F.31]		
Comments	Per Project Accounting Area, value for 31/12/20		

Data / Parameter	$E_{B \Delta DW}^{[i]}$
Data unit	tCO2e
Description	Baseline emissions from dead wood in monitoring period i
Equations	[F.36]
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, Appendix B.2.4 and B.2.5
Frequency of monitoring/recording	Prior monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$E_{B \Delta SOC}^{[m]}$								
Data unit	tCO ₂ e								
Description	Baseline change in emissions from soil carbon								
Equations	[F.15], [F.33]								
Source of data	Measurements in the proxy area								
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, sections 8.1.2.1, 8.1.2.2, 8.1.2.3, Appendix B.2.6								
Frequency of monitoring/recording	Every monitoring period								
Value applied	<table border="1"> <thead> <tr> <th colspan="2">Instance</th></tr> </thead> <tbody> <tr> <td>1</td><td>210,895</td></tr> <tr> <td>2</td><td>26,382</td></tr> <tr> <td>Total</td><td>237,277</td></tr> </tbody> </table>	Instance		1	210,895	2	26,382	Total	237,277
Instance									
1	210,895								
2	26,382								
Total	237,277								
Monitoring equipment	Not applicable								
QA/QC procedures to be applied	Review of monitoring records								
Purpose of data	Calculation of baseline emissions								
Calculation method	Equation [F.26]								
Comments	Per Project Accounting Area, value for 31/12/20								

Data / Parameter	$E_{B \Delta SOC}^{[i]}$
Data unit	tCO ₂ e
Description	Baseline emissions from soil carbon in monitoring period i
Equations	[F.33]
Source of data	Measurements in the proxy area

Description of measurement methods and procedures to be applied	VCS Methodology VM0009, sections 8.1.2.1, 8.1.2.2, 8.1.2.3 and Appendix B.2.6								
Frequency of monitoring/recording	Prior monitoring period								
Value applied	<table border="1"> <thead> <tr> <th colspan="2">Instance</th></tr> </thead> <tbody> <tr> <td>1</td><td>210,895</td></tr> <tr> <td>2</td><td>26,382</td></tr> <tr> <td>Total</td><td>237,277</td></tr> </tbody> </table>	Instance		1	210,895	2	26,382	Total	237,277
Instance									
1	210,895								
2	26,382								
Total	237,277								
Monitoring equipment	Not applicable								
QA/QC procedures to be applied	Review of monitoring records								
Purpose of data	Calculation of baseline emissions								
Calculation method	Equation [F.26]								
Comments	Per Project Accounting Area, value for 31/12/20								

Data / Parameter	$E_{B\ AGMT}^{[m]}$
Data unit	tCO ₂ e
Description	Cumulative baseline emissions from above-ground commercial trees at the end of the current monitoring period
Equations	[F.34], [F.51]
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, sections 8.1.6.1, 8.1.6.2 and 8.1.6.3
Frequency of monitoring/recording	Every monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable

QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$E_{B\ BGG}^{[m]}$								
Data unit	tCO2e								
Description	Cumulative baseline emissions from below-ground biomass at the end of the current monitoring period								
Equations	[F.31]								
Source of data	Measurements in the proxy area								
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.1.4								
Frequency of monitoring/recording	Every monitoring period								
Value applied	<table border="1"> <thead> <tr> <th colspan="2">Instance</th></tr> </thead> <tbody> <tr> <td>1</td><td>828,479</td></tr> <tr> <td>2</td><td>212,493</td></tr> <tr> <td>Total</td><td>1,040,971</td></tr> </tbody> </table>	Instance		1	828,479	2	212,493	Total	1,040,971
Instance									
1	828,479								
2	212,493								
Total	1,040,971								
Monitoring equipment	Not applicable								
QA/QC procedures to be applied	Review of monitoring records								
Purpose of data	Calculation of baseline emissions								
Calculation method	Equation [F.30]								
Comments	Per Project Accounting Area, value for 31/12/20								

Data / Parameter	$E_{B\ BGG}^{[m-1]}$
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Data unit	tCO ₂ e
Description	Cumulative baseline emissions from below-ground biomass at the beginning of the current monitoring period
Equations	[F.31]
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.1.4
Frequency of monitoring/recording	Prior monitoring period
Value applied	0
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable
Purpose of data	Calculation of baseline emissions
Calculation method	Equation [F.30]
Comments	Per Project Accounting Area, value for 31/12/20

Data / Parameter	$E_{B\ BM}^{[m]}$
Data unit	tCO ₂ e
Description	Cumulative baseline emissions from biomass at the end of the current monitoring period
Equations	[F.16], [F.30], [F.52]
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, sections 8.1.1 and 8.1.1.5.1
Frequency of monitoring/recording	Every monitoring period

Value applied	<table> <tr> <th colspan="2">Instance</th></tr> <tr> <td>1</td><td>4,399,508</td></tr> <tr> <td>2</td><td>1,128,410</td></tr> <tr> <td>Total</td><td>5,527,918</td></tr> </table>	Instance		1	4,399,508	2	1,128,410	Total	5,527,918
Instance									
1	4,399,508								
2	1,128,410								
Total	5,527,918								
Monitoring equipment	Not applicable								
QA/QC procedures to be applied	Review of monitoring records								
Purpose of data	Calculation of baseline emissions								
Calculation method	Equation [F.21]								
Comments	Per Project Accounting Area, value for 31/12/20								

Data / Parameter	$E_{B\ DW}^{[m]}$
Data unit	tCO ₂ e
Description	Cumulative baseline emissions from dead wood at the end of the current monitoring period
Equations	[F.35]
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.1.3
Frequency of monitoring/recording	Every monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$E_{B\ DW}^{[m-1]}$
Data unit	tCO2e
Description	Cumulative baseline emissions from dead wood at the beginning of the current monitoring period
Equations	[F.35]
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.1.3
Frequency of monitoring/recording	Prior monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$E_{B\ SOC}^{[m]}$
Data unit	tCO2e
Description	Cumulative baseline emissions from soil carbon at the end of the current monitoring period
Equations	[F.16], [F.26]
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, sections 8.1.2.1, 8.1.2.2 and 8.1.2.3
Frequency of monitoring/recording	Every monitoring period
Value applied	

		Instance		
		1	762,972.5	
		2	131,556.1	
		Total	894,528.6	
Monitoring equipment	Not applicable			
QA/QC procedures to be applied	Review of monitoring records			
Purpose of data	Calculation of baseline emissions			
Calculation method	Equation [F.28]			
Comments	Per Project Accounting Area, value for 31/12/20			

Data / Parameter	$E_{B\ SOC}^{[m-1]}$
Data unit	tCO ₂ e
Description	Cumulative baseline emissions from soil carbon at the beginning of the current monitoring period
Equations	[F.26]
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, sections 8.1.2.1, 8.1.2.2 and 8.1.2.3
Frequency of monitoring/recording	Prior monitoring period
Value applied	0
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable
Purpose of data	Calculation of baseline emissions
Calculation method	Equation [F.28]
Comments	Per Project Accounting Area

Data / Parameter	$E_{BA}^{[m]}$								
Data unit	tCO2e								
Description	Cumulative emissions allocated to the buffer account at the end of the current monitoring period								
Equations	[F.55]								
Source of data	Not applicable								
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.4.4								
Frequency of monitoring/recording	Every monitoring period								
Value applied	<table border="1"> <thead> <tr> <th colspan="2">Instance</th></tr> </thead> <tbody> <tr> <td>1</td><td>308,618.7</td></tr> <tr> <td>2</td><td>16,749.5</td></tr> <tr> <td>Total</td><td>325.368.2</td></tr> </tbody> </table>	Instance		1	308,618.7	2	16,749.5	Total	325.368.2
Instance									
1	308,618.7								
2	16,749.5								
Total	325.368.2								
Monitoring equipment	Not applicable								
QA/QC procedures to be applied	Review of monitoring records								
Purpose of data	Quantification of Gross Emissions Reductions								
Calculation method	Multiplication								
Comments	Per Project Accounting Area, value for 31/12/20								

Data / Parameter	$E_L^{[m]}$
Data unit	tCO2e
Description	Cumulative emissions from leakage at the end of the current monitoring period
Equations	[F.44]
Source of data	Measurements in the leakage area(s)

Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.3
Frequency of monitoring/recording	Every monitoring period
Value applied	0
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	Equation [F.45]
Comments	For the first monitoring period, cumulative emissions from activity-shifting leakage are zero, section 8.3.2 of the methodology

Data / Parameter	$E_L^{[m-1]}$
Data unit	tCO ₂ e
Description	Cumulative emissions from leakage at the beginning of the current monitoring period
Equations	[F.44]
Source of data	Measurements in the leakage area(s)
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.3
Frequency of monitoring/recording	Prior monitoring period
Value applied	0
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable
Purpose of data	Calculation of leakage
Calculation method	Equation [F.45]

Comments	Per Project Accounting Area, for 31/12/20
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Data / Parameter	$E_{L\Delta}^{[m]}$
Data unit	tCO2e
Description	Change in emissions due to leakage
Equations	[F.53]
Source of data	Not applicable
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.3
Frequency of monitoring/recording	Every monitoring period
Value applied	0
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	Equation [F.44]
Comments	For the first monitoring period, cumulative emissions from activity-shifting leakage are zero, section 8.3.2 of the methodology

Data / Parameter	$E_{LASF}^{[m]}$
Data unit	tCO2e
Description	Cumulative emissions from activity-shifting leakage in forested strata at the end of the current monitoring period
Equations	[F.45]
Source of data	Measurements in the activity-shifting leakage area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.3
Frequency of	Every monitoring period

monitoring/recording	
Value applied	0
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	Equation [F.46]
Comments	For the first monitoring period, cumulative emissions from activity-shifting leakage are zero, section 8.3.2 of the methodology

Data / Parameter	$E_{L\ ASG}^{[m]}$
Data unit	tCO ₂ e
Description	Cumulative emissions from activity-shifting leakage in native grassland strata at the end of the current monitoring period
Equations	[F.44], [F.45]
Source of data	Measurements in the activity-shifting leakage area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.3.3.4
Frequency of monitoring/recording	Every monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	Equation [F.47]
Comments	For the first monitoring period, cumulative emissions from activity-shifting leakage are zero, section 8.3.2 of the methodology

Data / Parameter	$E_{L\ ME}^{[m]}$
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Data unit	tCO ₂ e
Description	Cumulative emissions from market leakage at the end of the current monitoring period
Equations	[F.45]
Source of data	Measurements in the market leakage area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.3
Frequency of monitoring/recording	Every monitoring period
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$E_p^{[m]}$
Data unit	tCO ₂ e
Description	Change in project emissions
Equations	[F.53]
Source of data	Monitoring records for Forest Fire, Burning, logging, wood products, and natural disturbance events
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.2
Frequency of monitoring/recording	Every monitoring period
Value applied	Instance

	1	495,766	
	2	16,373	
	Total	512,128	
Monitoring equipment	Not applicable		
QA/QC procedures to be applied	Review of monitoring records		
Purpose of data	Calculation of project emissions		
Calculation method	Equation [F.41]		
Comments	Assumed value for 31/12/20.		

Data / Parameter	$E_p^{[m]} \Delta_{BRN}$									
Data unit	tCO2e									
Description	Cumulative project emissions due to burning at the end of the current monitoring period									
Equations	[F.41]									
Source of data	Monitoring plots in the project									
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.2.2									
Frequency of monitoring/recording	Every monitoring period									
Value applied	<table><tr><th colspan="2">Instance</th></tr><tr><td>1</td><td>387,568</td></tr><tr><td>2</td><td>12,783</td></tr><tr><td>Total</td><td>400,351</td></tr></table>		Instance		1	387,568	2	12,783	Total	400,351
Instance										
1	387,568									
2	12,783									
Total	400,351									
Monitoring equipment	Not applicable									
QA/QC procedures to be applied	Review of monitoring records									
Purpose of data	Calculation of project emissions									

Calculation method	Equation [F.42]
Comments	Assumed value for 31/12/20.

Data / Parameter	$E_p^{[m]} \Delta LS$								
Data unit	tCO2e								
Description	Cumulative project emissions due to livestock grazing within the project area.								
Equations	[F.43]								
Source of data	Monitoring in the project area								
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.2.4								
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)								
Value applied	<table border="1"> <thead> <tr> <th colspan="2">Instance</th></tr> </thead> <tbody> <tr> <td>1</td><td>108,187</td></tr> <tr> <td>2</td><td>3,590</td></tr> <tr> <td>Total</td><td>111,777</td></tr> </tbody> </table>	Instance		1	108,187	2	3,590	Total	111,777
Instance									
1	108,187								
2	3,590								
Total	111,777								
Monitoring equipment	Not applicable								
QA/QC procedures to be applied	Review of monitoring records								
Purpose of data	Calculation of project emissions								
Calculation method	Equation [F.43]								
Comments	Assumed value for 31/12/20.								

Data / Parameter	$E_p^{[m]} \Delta SF$
Data unit	tCO2e
Description	Cumulative project emissions due to the use of synthetic fertilizers within the project area.

Equations	[F.53]
Source of data	Monitoring in the project area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.2.5
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$E_U^{[m]}$
Data unit	tCO ₂ e
Description	Cumulative confidence deduction at the end of the current monitoring period
Equations	[F.55]
Source of data	Not applicable
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.4.1.1
Frequency of monitoring/recording	Every monitoring period
Value applied	0
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of confidence deduction

Calculation method	Equation [F.57]
Comments	Per Project Accounting Area

Data / Parameter	n_{LSi}								
Data unit	Count								
Description	The number of head of livestock species / category i in the project area								
Equations	[F.43]								
Source of data	Monitoring in the project area								
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.2.4								
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)								
Value applied	<table border="1"> <thead> <tr> <th colspan="2">Instance</th></tr> </thead> <tbody> <tr> <td>1</td><td>100,000</td></tr> <tr> <td>2</td><td>20,000</td></tr> <tr> <td>Total</td><td>120,000</td></tr> </tbody> </table>	Instance		1	100,000	2	20,000	Total	120,000
Instance									
1	100,000								
2	20,000								
Total	120,000								
Monitoring equipment	Not applicable								
QA/QC procedures to be applied	Review of monitoring records								
Purpose of data	Calculation of project emissions								
Calculation method	Aerial estimation								
Comments	Assumed value								

Data / Parameter	$P_{L\ DEG}^{[m]}$
Data unit	Proportion (unitless)
Description	Portion of leakage due to degradation in forest at the end of the current monitoring period
Equations	[F.46], [F.47], [F.48], [F.49]

Source of data	Monitoring in the leakage area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.3.2.3
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	Not available yet
Monitoring equipment	See annex 6
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of project emissions
Calculation method	Field measurements
Comments	

Data / Parameter	$P_{L\ DEG}^{[m=0]}$
Data unit	Proportion (unitless)
Description	Portion of leakage due to degradation prior to first verification event
Equations	[F.48]
Source of data	Monitoring in the leakage area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.3.2.3
Frequency of monitoring/recording	First monitoring period
Value applied	Not available yet
Monitoring equipment	See annex 6
QA/QC procedures to be applied	Project verification
Purpose of data	Calculation of project emissions
Calculation method	Field measurements

Comments	
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Data / Parameter	$P_{L\,CON\,G}^{[m=0]}$
Data unit	Proportion (unitless)
Description	Portion of leakage due to native grasslands prior to the first verification event
Equations	[F.47], [F.49]
Source of data	Monitoring in the leakage area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.3.2.4
Frequency of monitoring/recording	First monitoring period
Value applied	Not applicable
Monitoring equipment	Nor applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of project emissions
Calculation method	Field measurements
Comments	

Data / Parameter	$P_{L\,CON\,G}^{[m]}$
Data unit	Proportion (unitless)
Description	Portion of leakage due to native grasslands conversion at the beginning of the current monitoring period
Equations	[F.47], [F.49]
Source of data	Monitoring in the leakage area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.3.2.4

Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of project emissions
Calculation method	Field measurements
Comments	

Data / Parameter	$P_{L\,CON\,G}^{[m-1]}$
Data unit	Proportion (unitless)
Description	Portion of leakage due to native grasslands conversion at the end of the current monitoring period
Equations	[F.47], [F.49]
Source of data	Monitoring in the leakage area
Description of measurement methods and procedures to be applied	VCS Methodology VM0009, section 8.3.2.4
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of project emissions
Calculation method	Field measurements
Comments	

Data / Parameter	$P_{SL}^{[m]}$
Data unit	Proportion (unitless)

Description	Proportion of AGMT that is not merchantable and goes into slash estimated from inventory
Equations	[F.34]
Source of data	Estimated from inventory
Description of measurement methods and procedures to be applied	8.1.6.3
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

Data / Parameter	$t^{[i-1]}$
Data unit	Days
Description	Time from project start date to beginning of monitoring period i
Equations	[F.32], [F.33]
Source of data	Monitoring records
Description of measurement methods and procedures to be applied	Not applicable
Frequency of monitoring/recording	Prior monitoring period
Value applied	Various
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable

Purpose of data	Calculation of baseline emissions
Calculation method	Substraction
Comments	

Data / Parameter	$t^{[m]}$
Data unit	Days
Description	Time from project start date to end of current monitoring period
Equations	[F.19], [F.20], [F.24], [F.21], [F.25], [F.27], [F.28], [F.32], [F.33], [F.36], [F.37], [F.38], [F.39], [F.40]
Source of data	Monitoring records
Description of measurement methods and procedures to be applied	Not applicable
Frequency of monitoring/recording	Every monitoring period
Value applied	Various
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Substraction
Comments	

Data / Parameter	$t^{[m-1]}$
Data unit	Days
Description	Time from project start date to beginning of current monitoring period
Equations	[F.10], [F.36]
Source of data	Monitoring records

Description of measurement methods and procedures to be applied	Not applicable
Frequency of monitoring/recording	Prior monitoring period
Value applied	Various
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable
Purpose of data	Calculation of baseline emissions
Calculation method	Subtraction
Comments	

Data / Parameter	$U_B^{[m]}$
Data unit	tCO2e
Description	Total uncertainty in proxy area carbon stock estimate
Equations	[F.57]
Source of data	Not applicable
Description of measurement methods and procedures to be applied	Not applicable
Frequency of monitoring/recording	Every monitoring period
Value applied	74.31
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of confidence deduction
Calculation method	Equation [B.34]
Comments	Per Project Accounting Area

Data / Parameter	$U_{EM}^{[m]}$
Data unit	tCO2e
Description	Total uncertainty in Baseline Emissions Models for the Project Accounting Areas
Equations	[F.57]
Source of data	Not applicable
Description of measurement methods and procedures to be applied	Not applicable
Frequency of monitoring/recording	Every monitoring period
Value applied	0.18
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of confidence deduction
Calculation method	Equation [F.14]
Comments	

Data / Parameter	$U_P^{[m]}$
Data unit	tCO2e
Description	Total uncertainty in Project Accounting Areas carbon stock estimate
Equations	[F.57]
Source of data	Not applicable
Description of measurement methods and procedures to be applied	Not applicable
Frequency of monitoring/recording	Every monitoring period

Value applied	67.82
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of confidence deduction
Calculation method	Equation [B.34]
Comments	

Data / Parameter	$WC_{Pi}^{[m=0]}$			
Data unit	tCO2e			
Description	Weighted average carbon stocks for biomass or SOC in the project for the set of selected strata for the Project Accounting Areas			
Equations	[F.29] [F.24]			
Source of data	Inventory			
Description of measurement methods and procedures to be applied	Inventory, GIS			
Frequency of monitoring/recording	Every monitoring period			
Value applied		Instance		
		1	521.14	
		2	315.88	
Monitoring equipment	Not applicable			
QA/QC procedures to be applied	Review of monitoring records			
Purpose of data	Calculation of project emissions			
Calculation method	Equation [B.35]			
Comments				

Data / Parameter	$x^{[m]}$
Data unit	Varies
Description	Covariate values
Equations	[F.19], [F.20], [F.21], [F.24], [F.25], [F.27], [F.28], [F.37], [F.38], [F.39], [F.40]
Source of data	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery
Description of measurement methods and procedures to be applied	Not applicable
Frequency of monitoring/recording	Every time measured (≤ 5 yrs)
Value applied	Not applicable
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Not applicable
Calculation method	Not applicable
Comments	Parameter not used

3.3.3 Monitoring Plan

The monitoring plan consists of a sampling inventory for carbon stocks following the guidelines described in Appendix B of the methodology VM0009, the sample size was calculated using the area per stratum following the proportional allocation equation.

The location of the plots for the PAAs was determined as follows:

- a total of five priority categories were initially defined taking into account the differences in the project area and the accessibility conditions; these five categories are projected to be monitored during the period 2020–2024
- According to the prioritised category, areas with a circumference from a 4 km radius were drawn
- within each of these areas, the carbon plots were located with the criteria of being areas with a radius of at least 250 m with the same stratum in the case of forest areas, and a radius of 100 m for grassland areas
- a minimum distance of 3 km between plots of the same stratum and 1 km between plots of different stratum was determined

The location of the proxy area plots follows the same approach as that of the PAAs. Priority categories were initially defined, taking into account the differences in the project area and the accessibility conditions, these categories will be monitored during the period 2020–2024. As per the sampling procedures on the leakage, cluster areas subject to potential leakage were chosen in three priority categories, and several leakage plots will be assessed in each cluster.

These variables will be monitored at least every five years, taking into account the required monitored frequency established in the methodology.

The complete monitoring plan described in Annex 6.

3.3.4 Dissemination of Monitoring Plan and Results (CL4.2)

To disseminate the monitoring plan with the community, local consultations and briefings will be held, and at subsequent meetings the results related to the project's impacts will be presented. At every monitoring period, the monitoring plan and all the documents and information about the results of the monitoring and verification of this project will be published on the VERRA platforms.

3.4 Optional Criterion: Climate Change Adaptation Benefits

3.4.1 Regional Climate Change Scenarios (GL1.1)

Africa is highly vulnerable to the various manifestations of climate change. The situations that are particularly important, according to the Intergovernmental Panel on Climate Change (IPCC), are:⁶⁵

- water resources
- food security at risk from declines in agricultural production and an uncertain climate
- natural resources productivity at risk and biodiversity that might be irreversibly lost
- vector- and water-borne diseases, especially in areas with inadequate health infrastructure
- exacerbation of desertification by changes in rainfall and intensified land-use

Concerning CAR, the World Bank Group reports the following climate projections for the variables of precipitation and temperature (Table 17).

Table 17: Climate change projections in CAR⁶⁶

Climatic variable	Projection
Temperature	• Temperature projections for the Central African Republic show an increase between 0.7-3°C by 2080 for low, medium, and high emissions scenarios. • Mean annual temperature projections indicate increases over CAR, with RCP8.5 projections indicating over a 2°C increase by mid-21st century and an increase greater than 4°C by late 21st century.
Precipitation	• Ensemble mean projections for total annual precipitation indicate increases in rainfall by 2046-2065 and 2081-2100 for low, medium, and

⁶⁵ <https://www.ipcc.ch/site/assets/uploads/2018/03/wg2TARchap10.pdf>

⁶⁶ <https://climateknowledgeportal.worldbank.org/country/central-african-republic/climate-data-historical>

Climatic variable	Projection
	high emissions scenarios. The largest projected change in rainfall is in the southern part of the country along its border with Southeast Cameroon, the Congo, and the Democratic Republic of the Congo. • RCP8.5 annual average precipitation projections point toward increases in precipitation for middle and late 21st century over CAR, whereas RCP2.6 projections indicate little or no change for these timescales. • Rainfall is projected to become more erratic, in terms of duration, intensity, and frequency.

- Climate scenarios

The projected changes for the CAR for both monthly temperature (2020–2099) and annual mean drought index (2020–2099)⁶⁷ were obtained for two contrast scenarios. The first one is a low-emission scenario (RCP 2.6) where is required that CO₂ emissions start declining by 2020 and go to zero by 2100, and the second one is a high-emission scenario (RCP 8.5) where emissions continue to rise throughout the current century.

The results for a low scenario in the CAR (Figure 33 and Figure 34) shows less variable conditions compared to the historic levels. On the other hand, the RCP 8.5 scenario leads to a more drought conditions in the country (Figure 35 and Figure 36) bringing negative consequences on socioeconomic and biodiversity aspects.

⁶⁷ It incorporates both precipitation input variations as well as changes in the loss of water through evapotranspiration. It is widely used today as a global measure for drought monitoring over various cumulative time intervals. Positive values indicate positive water balance (or wet) conditions and negative values indicate negative water balance (or dry) conditions.

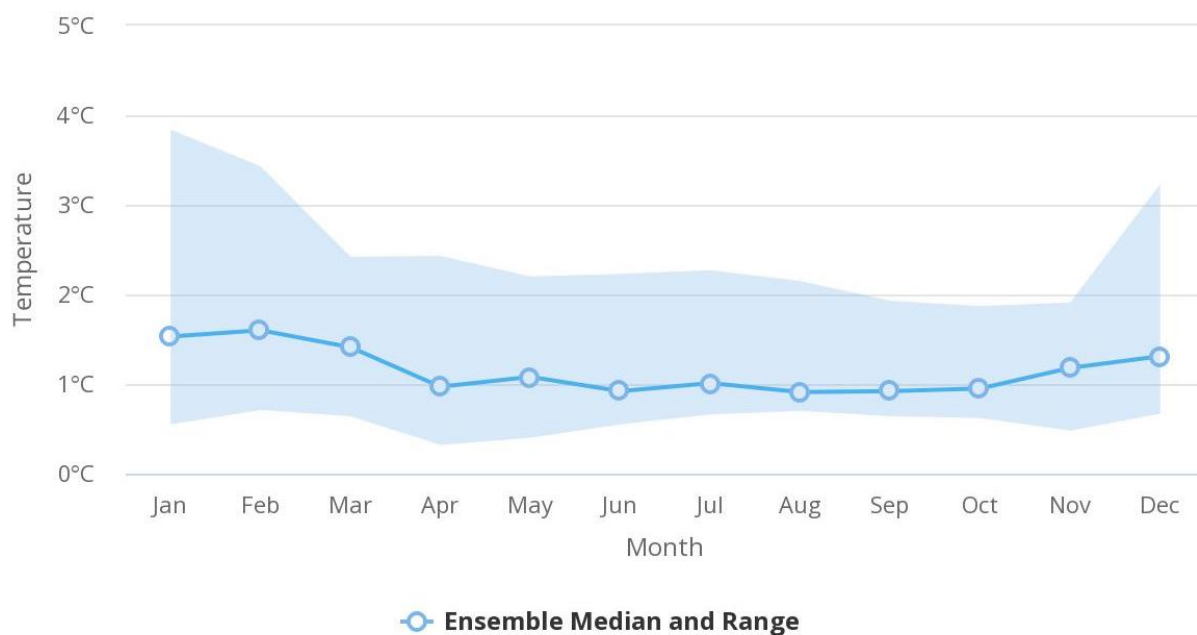


Figure 33: Projected change in monthly temperature for the CAR for 2020-2099 (low emission scenario)

Source: World Bank Group - Climate Change Knowledge Portal (or CCKP)

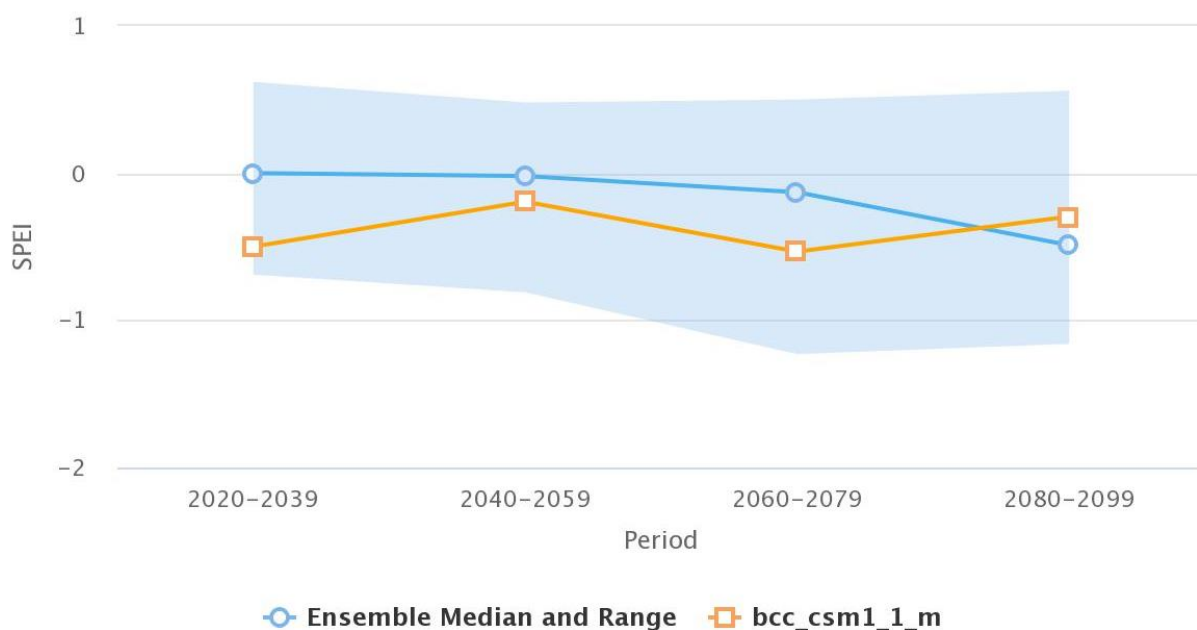


Figure 34: Projected change in annual mean drought index for the CAR for 2020-2099 (low emission scenario)

Source: World Bank Group - Climate Change Knowledge Portal (or CCKP)

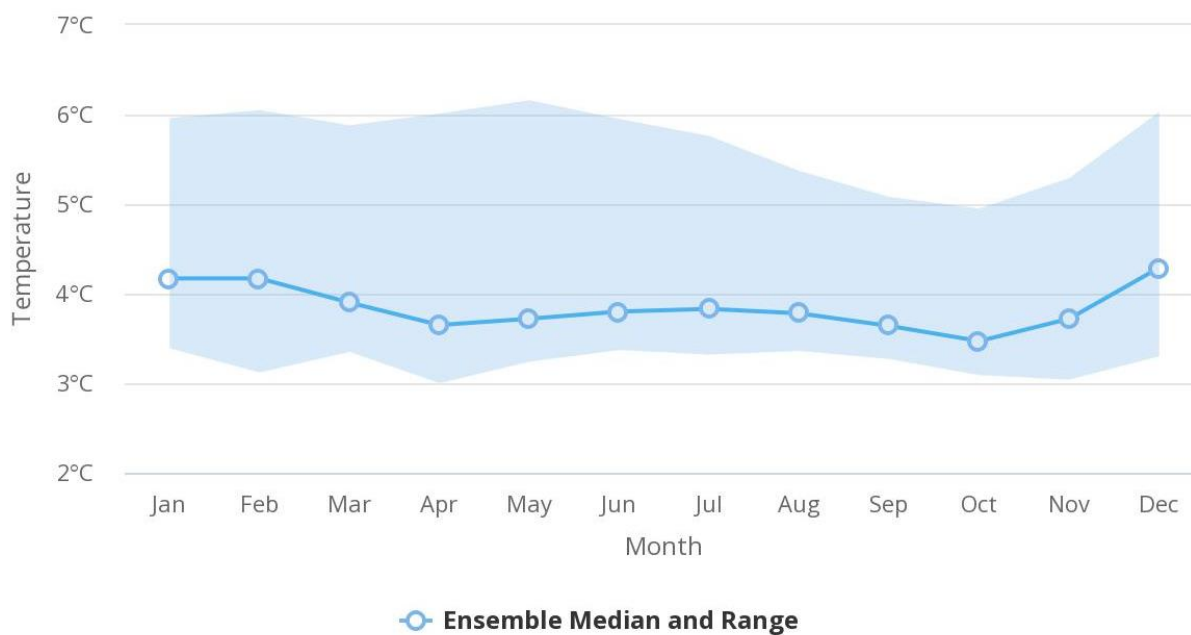


Figure 35: Projected change in monthly temperature for the CAR for 2020-2099 (high emission scenario)

Source: World Bank Group - Climate Change Knowledge Portal (or CCKP)

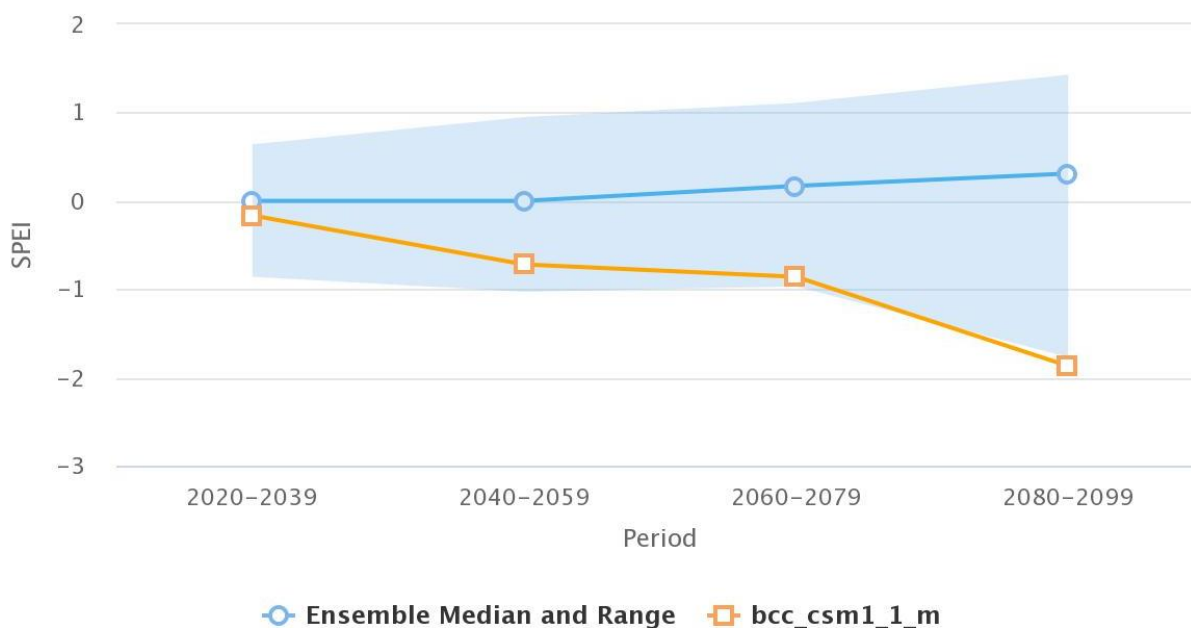


Figure 36: Projected change in annual mean drought index for the CAR for 2020-2099 (high emission scenario)

Source: World Bank Group - Climate Change Knowledge Portal (or CCKP)

3.4.2 Climate Change Impacts (GL1.2)

In the CAR the vulnerability to changes in the climate and a lack of ability to adapt to their adverse impacts represent serious threats to the management of ecosystems and other agricultural and renewable natural resources, social cohesion, stability and sustainable development.⁶⁸ The main impacts in the project zone regarding social and biodiversity aspects are listed below:

Community wellbeing

According to Sonwa et al. (2014), at a local scale in Central Africa, forest communities suffer the effects of climate change in the absence of well-planned policy and institutional frameworks, and communities appear unprepared to cope with climate change as shown by the vulnerability studies undertaken under CoFCCA (Congo Basin Forests and Climate Change Adaptation), by using Participatory Action Research (PAR), the CoFCCA project initiated pilot adaptation responses in the DRC, the CAR, and Cameroon.

Climate change will further exacerbate development challenges in CAR, impacting agricultural production and food security significantly due to the changes in the regime of precipitation and alteration in temperature, and will weaken the ability of the environment to provide vital resources and services.

Many pastoral communities include transnational migrants in search of new seasonal grazing. In drought situations, such pastoralists may come into conflict with settled agrarian systems.

Biodiversity

Climate change in Central Africa is expected to lead to a higher dominance of pioneers in forest compositions. Although pioneers are mostly deciduous and therefore well adapted to seasonal drought, the increase in their dominance may have a negative effect on the global ecosystem resistance to water stress because pioneers that allocate their resources to fast growth are less resistant to water stress (Claeys et al., 2019).

In addition to plant biodiversity, in protected forests like Chinko in the CAR which are home to megafauna, climate change could result in additional pressure by both altering ecosystem dynamics and encouraging human encroachment into these areas. The climate impacts in the region could shrink the physical extent of habitats that currently have protected status, or shift the distribution of specific plant species on which endangered species depend to areas outside of protection.⁶⁹

3.4.3 Measures Needed and Designed for Adaptation (GL1.3)

The implementation of the REDD project will create positive net climate change impacts. The sequestration of carbon in living biomass and the avoided deforestation of natural covers which act as sinks of CO₂ will contribute to the reduction of GHG emissions in the project zone.

The measures to assist communities and biodiversity to adapt to the probable impacts of climate change are designed to avoid the loss of forest cover by fighting the main drivers according to their contribution (%) to deforestation caused.

The main measures needed in the project area are listed below:

⁶⁸

https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Central%20African%20Republic%20First/INDC_R%203%20publique%20Centrafricaine_EN.pdf

⁶⁹ https://reliefweb.int/sites/reliefweb.int/files/resources/20180604_USAID-ATLAS_ClimateRiskProfile_CARPE.pdf

- Establish transhumant pastoralism corridors (TPCs).
- Monitor wildlife and human activities to optimise conservation activities and strategies.
- Review and amend the zoning in relation to key species and habitats for effective management and appropriate protection.
- Expand the core protection area.
- Recruit and train a sufficient number of rangers, eco-monitors, eco-transhumance officers and control room operators.
- Adequately equip law enforcement teams.
- Develop a fit-for-purpose vehicle and aircraft fleet for operations, with adequate maintenance facilities and maintenance plans.
- Provide sufficient air support to ensure law enforcement, community and operations.
- Sensitise pastoralists to promote sustainable use of natural resources in line with the land-use plan.
- Sensitise communities to promote the sustainable use of natural resources in line with the land-use plan.
- Develop an information network with an associated incentive scheme to act as an early warning system and information sharing platform.
- Strengthen coordination with local and national government and civilian agencies/committees and organise regular visits to the CPA for relevant ministers and senior officials from Bangui, as well as local authorities and communities.
- Directly engage two key ministries in Chinko operations.
- Ensure that a positive, shareable, messaging reaches the national audience to promote awareness and constituency for conservation.
- Identify key income generating opportunities.
- Establish a good relationship with the communities to enhance local skills training, welfare development, self-sustaining business development.
- Support regional education, healthcare facilities and sports competitions.

4 COMMUNITY

4.1 Without-Project Community Scenario

4.1.1 Descriptions of Communities at Project Start (CM1.1)

At present, the CCA is uninhabited and only has limited road access and minor infrastructure development. There are, however, local communities and other stakeholders living in the surrounding landscape that need to be considered within the larger context of the project.

The region in which the project is located is characterised by high levels of poverty, a lack of employment opportunities and skills amongst the local populations, and a lack of access to education and healthcare. According to the United Nations Population Fund, the average life expectancy for males in the CAR is 51 years, and for females, 55 years.⁷⁰ The literacy rate in the country is 37.4% (with males having a literacy rate of 49.5% and females 25.8%). 63% percent of the population live on under US\$ 1.25 per day.

The communities living on the periphery of the CCA are sedentary and are found mainly to the south and west of the CCA. These communities dependent on subsistence agriculture activities as well as hunting

⁷⁰ <https://www.unfpa.org/data/CF>

and the use of other forest resources for consumption or as a source of income. The local communities are predominantly composed of Bantu populations, although some Fulani pastoralists do live in the same villages. The Bantu population typically live in traditional houses made of clay or fired brick, with mud floors and roofs of straw or palm leaves. Some houses have corrugated iron sheeting roofs. The Fulani typically live in small mud-floored huts made of straw (Ondoua Ondoua, G. et al 2017).

The many years of conflict in the country (and in the eastern parts of CAR in particular) have left the majority of the population illiterate and lacking in skills and any opportunities for employment. There are few schools in the communities around the project area. The Bakouma Township has two schools. There is one school in Zemio and another in Lengo. The Rafai Township has 11 schools with five permanent teachers (Ondoua Ondoua, G. et al 2017). The middle schools in Rafai and Bakouma are managed by the Catholic Church and are not free of charge. Schools in the area are faced with a persistent lack of educational materials and some teachers have over 150 pupils. The closest secondary school in the area is in Bangassou. Most Fulani children do not attend formal schools because of their semi-nomadic lifestyle and their education is usually limited to the Koranic school. Similarly, there is a lack of access to healthcare in the communities on the periphery of the project. Most people requiring healthcare must travel to clinics in Bakouma, Bangassou or Rafai.

As stated, poverty is prevalent in the communities around the CCA and there are few economic opportunities for the populations in the area. As a result, the local communities are greatly dependent on natural resources. These communities make their living through small-scale subsistence agriculture, livestock rearing, hunting (both legal and illegal), fishing, harvesting of NTFPs, artisanal mining, small trade and temporary employment. Hunting/poaching is by far the most important source of income for households (59.5%), four times that generated by agriculture (15.1%) and six times the money earned from fishing (9.7%). See Table 18 below for more detail on the average annual income per household derived from different livelihood activities.

Table 18: Activities and percentage of average annual income

Activity	Percentage of average annual income
Hunting	59.5
Agriculture	15.1
Fishing	9.7
Livestock	9.1
Temporary work	5.8
Small trade	0.4
NTFPs	0.3
Handicrafts	0.1

Mining	0
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Source: (Ondoua Ondoua, G. et al 2017).

There is another group of stakeholders in the region in which the project is located. They are transhumant pastoralists known locally as Mbororo that come mainly from the Darfur region of Sudan. The Mbororo have only recently begun driving their cattle deeper into the CAR and the CCA. This has mainly been as a result of the degradation of the grazing land along their traditional routes but also a response to other factors such as violence in South Sudan and improvements in veterinary medicine that allows their cattle to survive in the more humid climate.

The Mbororo walk long distances from the Sahel regions of Chad and Sudan in the north, with their cattle, camping under tarps between wood poles and trading with villages along the way before returning at the end of the grazing season. Some travel with their families while others are employed by wealthy cattle owners to look after their cattle. In many cases these pastoralists are heavily armed. Groups selling supplies such as veterinary drugs also often accompany the pastoralists during their seasonal migration using donkeys to carry their supplies. The Mbororo's main economic activity is, unsurprisingly, cattle rearing but they also practice poaching for bushmeat and ivory and harvest NTFPs from the landscape. For more information on the potential impacts of the project on this stakeholder group see Section 4.3.

4.1.2 Interactions between Communities and Community Groups (CM1.1)

A number of armed groups have been identified as operating in the larger geographic landscape surrounding the CPA. These groups include the Lord's Resistance Army, the Séléka and ex-Séléka, amongst others. Armed groups engage in fighting in the areas surrounding the CCA and this affects the local communities as well as project staff and their families. For example, in 2017, 380 Internally Displaced People (IDP), mainly women and children, fled into the CCA for safety. After months of being provided with safety, food, water, shelter, healthcare and even employment, in June 2018 they voluntarily relocated back to their village.

There is also persistent conflict between transhumance herders and the local communities in the region. The enrolment of vulnerable young men into armed groups, the lack of traditional agro-pastoralist mediation structures and the annual migration of pastoralists into the CAR contributes to this conflict. This conflict often leads to resentment and violence amongst the groups. Local communities also suspect the Mbororo of having links to armed groups, and of supporting poachers and illegal wildlife traffickers. Some pastoralists are also exploited by armed groups to procure supplies from local communities.

4.1.3 High Conservation Values (CM1.2)

The communities living on the periphery of the CCA have a strong dependence on hunting and other forest resources for consumption and as a source of income. These activities are illegal in the project area and so the buffer areas adjacent to the project area have a high conservation value. This buffer zone provides critical ecosystem services and is fundamental to the livelihoods of the local communities.

High Conservation Value	Buffer/Transition zone
Qualifying Attribute	Hunting (small-scale, both legal and illegal) is an important activity for local communities around the project area. Local people hunt in the savannas throughout the year, but most intensively during

	the rainy season. Bushmeat from hunting is either consumed within the household or sold at village markets and then often sold on at bigger regional markets. Wildlife by-products, such as horns and skins, are also sold or used for ceremonial purposes. Other NTFPs also provide resources for consumption, medicine or as a source of income.
Focal Area	Area of influence adjacent to the core protected area

High Conservation Value	Chinko and Mbari Rivers
Qualifying Attribute	All adjacent communities (approximately 250'000 people) benefit from ecosystem services provided by the CCA. A constant supply of freshwater (even during the dry season) is supplied by major rivers like Mbari, Chinko and Mbomou which are morphologically and ecologically in a pristine stage. The ecosystem services provided by the CCA also ensures high water quality with low level of pollutants, parasites or germs due to the species rich aquatic community including oysters that efficiently filter surface water. A high number of small freshwater reservoirs (resulting from the natural vegetation that protects the soil from heavy rainfalls during the rainy season as well as wind and sun in the dry season) allow water to enter the soil and remain locally available even in the absence of rainfalls. Fishing is essential to local communities around Chinko, providing an alternative to meat as a source of protein. Many local people fish in the riverheads during the long dry season, when fish are most abundant, and much of the catch is consumed by the family. A significant proportion of annual income comes from the sale of fish.
Focal Area	Western and eastern boundaries of CCA

4.1.4 Without-Project Scenario: Community (CM1.3)

As previously stated, the CCA is uninhabited. There are, however, a number of factors that impact the well-being of communities and community groups living on the periphery of the CCA. These include insecurity in the region, persistent conflict between transhumant pastoralists and local agricultural communities, lack of education and employment opportunities, and poor health care. Without the project these factors will continue to have negative impacts on the well-being of communities and community groups in the region and are likely to start occurring within the project area.

The insecurity and the persistent threat of armed groups on the project borders and surrounding villages and towns are likely to continue and without the project's law enforcement activities the negative impacts of these activities will continue to be felt by the local communities. Without the project it is also likely that these armed groups will expand their territory into the CCA.

Without the project the persistent conflict between transhumance herders and local agricultural communities is also likely to continue. It is likely that conflict over land between farmers and cattle herders in the CAR will in fact increase in the future as a result of the increased cross-border migration from Chad and Sudan to find new pastureland as a result of the desertification in the areas north of the CCA. The increased availability of veterinary drugs will further allow these humid regions to become viable migration routes for transhumant pastoralists crossing into the CAR from Chad and Sudan.

The lack of education and exposure to violence in the region has resulted in a challenging human resource context with illiteracy and negative social pressures a common feature in local communities. Without the project it is likely that the increase in armed groups, poachers, illegal wildlife traders and cross border pastoralists will continue to result in conflict in the region, further reducing the access to and quality of education, as well as reducing the opportunity of employment in the region. This is likely to further reduce literacy rates and increase social pressures amongst local populations.

Without the project, sedentary communities will continue to rely on unsustainable agricultural and hunting practices and the transhumant pastoralists will continue degrading the landscape through unsustainable grazing practices. Deforestation will continue, with subsequent loss of biodiversity, further eroding the ability of the ecosystem to provide benefits to communities.

4.2 Net Positive Community Impacts

4.2.1 Expected Community Impacts (CM2.1)

By improving the lives and livelihoods of local communities the project will ensure that the project area is protected in the long term and that these critical ecosystem services are maintained.

It is expected that all adjacent communities will benefit from the CCA. This means approximately 250,000 people will indirectly benefit from the project activities. Improved livelihoods for these communities are expected in at least three levels. 1) Improved security (fewer armed groups and uncontrolled movements), 2) Preservation of wildlife (mammals, birds, fish, molluscs) that serve as an important source of nutrition for local populations. 3) Diverse ecosystem services such as constant supply of freshwater, protection from erosion, high air quality, amongst others.

The project also expects to directly impact approximately 2,000 local community members (from 35 different communities) in a positive way. African Parks has consulted extensively with the local communities and through a participatory approach have identified several activities that will have a positive impact on the lives and livelihoods of local communities. The project will also develop a comprehensive land-use plan to ensure that positive benefits are maximised. The project activities will not restrict any legal productive activities that local communities rely on within the project area, thus ensuring that the project does not negatively impact these communities.

The main impact areas of the project activities are:

- social development through skills training;

- environmental integrity through sustainable natural resource management; and
- economic resilience through secure livelihoods.

The assessment of impacts resulting from the project activities is based on the Sustainable Livelihoods Framework recommended by the Social and Biodiversity Impact Assessment Manual for REDD+. The table below describes the anticipated impacts on local communities.

Table 19: Project impacts on communities

Community Group	Impact(s)	Type of Benefit/Cost/Risk	Change in Well-being
Local communities	Increased income generating opportunities	Positive and direct benefit	New employment opportunities Improved livelihoods
	Improved agriculture practices	Positive and direct impact	Improved household food security and diet Increased quantity, diversification, and value of crops Improved nutritional value of crops Improved quality of life and cash from food surplus sales Improved health
	Increased perception/recognition of the value of forest resources	Positive and direct impact	Improved livelihoods Sustainable NTFP management
Workers	Improved skills through training	Positive and direct impact	Increased local capacities Improved livelihoods
	Increased employment opportunities for locals	Positive and direct impact	New employment opportunities Improved livelihoods

4.2.2 Negative Community Impact Mitigation (CM2.2)

Community members who depend on illegal activities to support their livelihoods (i.e. poaching, illegal wildlife trade, illegal mining) may experience short-term negative impacts from project activities that seek to curb these activities. At the same time, however, the project will provide alternatives to these activities that are capable of replacing this income with sustainable business development opportunities.

African Parks aims to assist local communities on the periphery of the CCA through different activities aimed at increasing income-generating opportunities, improving agricultural practices, skills training and supporting local education and healthcare wherever possible. Areas of HCV have been identified where sustainable hunting, agriculture and harvesting of NTFPs can be practiced by local communities while protecting the core protected area. The project activities will provide education and skills training to local communities to ensure that the integrity of the HCV areas is maintained and can continue to provide critical ecosystem services to the local communities.

As described above, there are no local communities that are anticipated to be negatively impacted by the project (apart from groups engaged in illegal activities). In the event of negative impacts, these should be reported and resolved in accordance with the grievance mechanism procedures that have been established.

Activities that have been undertaken to avoid/mitigate negative impacts on stakeholders include:

- Careful assessment of existing local conditions and stakeholder dynamics, prior to project implementation; and
- Significant stakeholder consultation prior to project implementation

The project has and will continue to train and recruit a number of eco-monitors that will maintain regular community presence and undertake regular assessments of programme activities and impacts to ensure that any potential negative impacts would be identified, reported, documented, and addressed/resolved within in a timely manner.

The project will also continuously review and amend the zoning in relation to key species and habitats for effective management and appropriate protection.

4.2.3 Net Positive Community Well-Being (CM2.3, GL1.4)

No negative impacts are expected from the implementation of the project activities. All the activities are expected to positively impact the local communities by improving their means of subsistence and offering attractive alternatives to the unsustainable use of the natural resources.

The key objectives of the project are to protect and enhance the condition of the CCA. These positive impacts on the ecosystems translate directly into community benefits. Because local communities are reliant on natural resources in the region, both for their subsistence and as a source of income, it is important that these ecosystem services are maintained and enhanced in the long term. Other positive impacts on community well-being that are expected from the project activities include: improved regional security, a reduction in conflict between local communities and transhumant pastoralist groups, and an increase in skills and employment opportunities amongst local communities. The project will also improve and assist local education, wherever possible.

See Table 20 below for more details on the anticipated net well-being impacts of the project compared with the without-project scenario.

Table 20: Positive net expected impacts of the project

Without project	With project	Net impact
The regional insecurity and the persistent threat of armed groups on local communities is likely to continue or worsen.	The project activities, particularly those focused on law enforcement will improve security in the region. In fact, this can already be observed and is well accepted amongst local communities as being directly attributable to the project.	Positive
Persistent conflict between local communities and transhumant pastoralists continues.	African Parks engages with pastoralist groups to identify suitable corridors that have a minimum impact on the biodiversity and carbon stocks within the project area, while also minimising potential conflict with local populations. This results in a reduction of conflict between local communities and the pastoralists.	Positive
Reduction in quantity and quality of natural resources near villages, particularly in terms of large game and NTFPs.	The active management of the CCA and the buffer zones, together with local communities, will allow community members to find more and higher quality hunting game in close proximity of the village for an efficient harvest that allows for sustainable practices.	Positive
The lack of recognition of the value of forest resources and their associated ecosystem services will continue amongst local communities. This will ultimately lead to deforestation, degradation and a loss of biodiversity in the region.	Through community engagement and education, the project will develop a constituency for conservation amongst local communities, ensuring the sustainable management of forest resources in the long-term. Forest ecosystems will continue to provide benefits to communities.	Positive
Lack of income-generating opportunities, employment	The project provides employment and skills training to local community members,	Positive

opportunities and skills will continue to negatively impact local communities.	thereby improving living conditions. The project will also identify and implement a number of income-generating opportunities such as eco-tourism, which will further improve the livelihoods of local communities.	
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4.2.4 High Conservation Values Protected (CM2.4)

The project will not have negative impacts on HCVs important to community well-being. To ensure the continuity of the high conservation values for the community, monitoring activities will be undertaken to mitigate any unforeseen impacts. Threats will be reduced through the implementation of project activities.

4.3 Other Stakeholder Impacts

4.3.1 Impacts on Other Stakeholders (CM3.1)

The project activities are unlikely to have any long-term impacts on the well-being of other stakeholders. The transhumant pastoralists that enter the CAR from the Darfur region of Sudan may be impacted by the project activities because grazing is illegal in the project area and the project aims to enforce the national laws in this regard. This impact will be short term as the project will establish corridors (in which the pastoralists will be able to graze their cattle) as well as provide support and knowledge sharing with these stakeholders to ensure that the project area is protected, and pastures are managed in a sustainable way over the long term.

4.3.2 Mitigation of Negative Impacts on Other Stakeholders (CM3.2)

As stated in Section 4.3.1, the project will establish transhumant pastoralist corridors in which the herders are able to practice sustainable grazing. African Parks will also train a sufficient number of eco-transhumance officers who will carry out sensitisation activities with the transhumant pastoralists. These eco-transhumance officers will maintain a regular presence in the area and undertake regular assessments of programme activities and impacts to ensure that any potential negative impacts are identified, reported, documented, and addressed/resolved within in a timely manner.

4.3.3 Net Impacts on Other Stakeholders (CM3.3)

No net negative impacts on other stakeholders are anticipated. The project activities are designed to ensure that transhumant pastoralists that currently practice illegal grazing in the project area will be provided with improved access to sustainably managed pasture. These corridors will result in the integrity of ecosystem services being improved. The forest understory and barren ground will recover to perennial grasslands. Hydrology and microclimate will improve. This will ensure levels of regeneration that will support the carrying capacity of cattle in the future.

4.4 Community Impact Monitoring

4.4.1 Community Monitoring Plan (CM4.1, CM4.2, GL1.4, GL2.2, GL2.3, GL2.5)

As previously stated in section 2.1.11, before AP signed a mandate to manage the CCA, transhumant pastoralists were beginning to drive their cattle deeper into the CCA which was resulting in large scale degradation and deforestation. The first objective of the project has been to ensure that the CCA is well protected and managed in a comprehensive way. By improving management, governance and technical capacities, the project has been able to effectively manage and enforce the national laws with regards to protected areas across the entire CCA.

As a result of this focus on law enforcement during its first years on site, most of the project impacts have been on biodiversity and climate. AP understands the need to build a strong constituency for conservation amongst local community members and has been engaging with communities through a variety of sensitization activities and other ad hoc assistance wherever possible. These community-based activities will continue to be a major focus of the project moving ahead.

Regular monitoring of the project's impacts on local communities has been, and will continue to be, conducted throughout the project's lifetime. African Parks have a sufficient number of well-trained staff that engage regularly with all local communities living on the periphery of the CCA. This regular engagement will ensure that all project impacts on communities are effectively and accurately monitored.

A theory of change was developed, and measurable indicators were established, to evaluate the community impacts of the project. The long-term success of the project relies heavily on building a strong constituency for conservation amongst the local communities living on the periphery of the CCA. Activities have been developed to build this constituency for conservation through ensuring community members understand the benefits of wildlife and habitat conservation, mitigating any perceived negative impacts of the management of the protected area and improving livelihoods through the sustainable use of natural resources and skills development. All the indicators will be designed to evaluate if the project activities are contributing towards meeting these objectives. The indicators will also be developed with the SMART framework in mind. This means that the indicators should be Simple, Measurable, Achievable, Relevant and Time-bound. Table 21 below gives a summary of the main objectives and activities of the community monitoring plan, the specific indicators and measurement frequency are still under development and will be presented along with the first monitoring report.

It is expected to have an annual, biannual, or quarterly monitoring frequency for most indicators and the indicators, additionally they will be evaluated every five years. At the end of the five years, and according to the results of the evaluation of the indicators, the project will reconsider them or set new goals in relation to the community impacts.

Table 21: Community monitoring plan objectives

Objective	Activity
Communities understand the benefits of wildlife/habitat conservation	Educate communities on the benefits of wildlife/habitat conservation
	Support regional sports competitions
	Support regional education

Perceived negative impacts of the CCA are mitigated	Arrange project visits
	Develop a comprehensive land use plan
	Establish community liaisons
Improved livelihoods	Enhance local skills
	Improve agricultural practices
	Identify eco-tourism opportunities

4.4.2 Monitoring Plan Dissemination (CM4.3)

Every monitoring period the monitoring plan and all the documents and information about the results of the monitoring and verification of this project will be published in the VERRA platform. Summaries of these monitoring reports will be translated into local languages and disseminated amongst communities where appropriate. Project activities and their results will also be discussed at regular community consultation meetings. This will ensure that even with the high levels of illiteracy in the region, monitoring information will be made publicly available to all local communities living on the periphery of the park.

4.5 Optional Criterion: Exceptional Community Benefits

The project does not seek to be validated at the Gold Level for exceptional community benefits.

5 BIODIVERSITY

5.1 Without-Project Biodiversity Scenario

5.1.1 Existing Conditions (B1.1)

The biodiversity described in this section corresponds to the flora and fauna that has been reported in this region. Both primary and secondary sources of information have been reviewed. The project area is made up of uninhabited Medio-Sudanian and Sudano-Guinean savannah, with patches of Congolian lowland rainforest as well as a pristine freshwater river system. Chinko's mosaic of ecosystems located at such a latitude on the African continent, means that this area is rich and unique in biodiversity.

Fauna

Central African Republic is one of the most diverse countries on the African continent, with its widely contrasting climatic range, with there being deserts in the northern parts and rainforests in the south (Blom, Yamindou, & Prins, 2004). The CCA consists of a mosaic of undisturbed wooded savanna and rainforest. The convergence of the two vastly different ecosystems creates a unique area where species and habitats overlap. Initial scientific research has documented 80 large mammal species (>100g), excluding species from rich groups such as smaller bats, rodents or shrews. There are also 26 species of carnivores, including top predators such as the endangered African wild dog, the highly vulnerable Northern lion and nine different species of mongoose, along with 11 primate species, including Eastern chimpanzees, 24 even-

toed ungulates, including Eastern giant eland, bongo antelope, Lelwel hartebeest, eight different species of duikers as well as five ant-eating mammals, including all four species of the African pangolin in this area. To date, 443 bird species have been identified as living in Chinko, with 50% of these bird species not being documented at present. It is predicted that about 600 bird species are likely to be inhabiting CAR, along with 115 fish species.

Mammals

Certain species that have been discovered in the Chinko landscape include chimpanzees, elephants, giant forest hogs, lions, wild dogs, hartebeests, hippopotamuses, African golden cats and lowland bongos.

Endangered species: The Chinko landscape is a key location for the endangered eastern subspecies of the chimpanzee (*Pan troglodytes schweinfurthii*). A new study estimates that 910 chimpanzees live in the project area and predicts that a further 2,700 individuals may inhabit adjacent hunting zones, which confirms that Chinko is the most important site in CAR where Eastern chimpanzees can be found, as well as other species such as the lowland bongo antelope (*Tragelaphus eurycerus*) and African savanna elephants (*Loxodonta africana*). The vulnerable Eastern giant eland, which is one of Chinko's most iconic species, is also an endangered species which requires urgent intervention to ensure its survival in the future (Table 22).

Birds

To date, 450 bird species have been identified in Chinko. Key species located in the CCA include black-bellied bustards, buzzards, guineafowl, hoopoes, hornbills, kingfishers, secretary birds, stone partridges and sunbirds.

Table 22: List of threatened or endangered species documented on the project area

Common name	Specie	State of conservation
		Red List of Threatened Species – UICN
African White Backed Vulture	<i>Gyps africanus</i>	CR
Hooded Vulture	<i>Necrosyrtes monachus</i>	CR
Rüppell's Vulture	<i>Gyps rueppelli</i>	CR
Slender-snouted Crocodile	<i>Mecistops cataphractus</i>	CR
African wild dog	<i>Lycaon pictus</i>	EN
Bateleur	<i>Terathopius ecaudatus</i>	EN
Eastern chimpanzee	<i>Pan troglodytes schweinfurthii</i>	EN
Giant Ground pangolin	<i>Smutsia gigantea</i>	EN
Lelwel Hartebeest	<i>Alcelaphus buselaphus ssp. lelwel</i>	EN

Common name	Specie	State of conservation
		Red List of Threatened Species – UICN
Martial Eagle	<i>Polemaetus bellicosus</i>	EN
Secretarybird	<i>Sagittarius serpentarius</i>	EN
White-bellied pangolin	<i>Phataginus tricuspis</i>	EN
African golden cat	<i>Caracal aurata</i>	VU
African leopard	<i>Panthera pardus</i>	VU
African Mahogany	<i>Khaya grandifoliola</i>	VU
African (forest) elephant	<i>Loxodonta africana (cyclotis)</i>	VU
Beaudouin's Snake-eagle	<i>Circaetus beaudouini</i>	VU
Black-bellied pangolin	<i>Phataginus tetradactyla</i>	VU
Common hippopotamus	<i>Hippopotamus amphibius</i>	VU
Eastern giant eland antelope	<i>Tragelaphus derbianus gigas</i>	VU
Giant pangolin	<i>Smutsia gigantea</i>	VU
Ground pangolin	<i>Smutsia temminckii</i>	VU
Kob	<i>Kobus kob ssp. kob</i>	VU
Leopard	<i>Panthera pardus</i>	VU
Long-tailed pangolin	<i>Phataginus tetradactyla</i>	VU
Lowland bongo antelope	<i>Tragelaphus eurycerus</i>	VU
Northern African lion	<i>Panthera leo leo</i>	VU
Northern Ground-hornbill	<i>Bucorvus abyssinicus</i>	VU
Northern lion	<i>Panthera leo leo</i>	VU
African Skimmer	<i>Rynchops flavirostris</i>	NT

Common name	Specie	State of conservation
		Red List of Threatened Species – UICN
Bay duiker	<i>Cephalophus dorsalis</i>	NT
Caracal	<i>Caracal caracal</i>	NT
Congo clawless otter	<i>Aonyx congicus</i>	NT
Crowned Eagle	<i>Stephanoaetus coronatus</i>	NT
Defassa Waterbuck	<i>Kobus ellipsiprymnus ssp. defassa</i>	NT
Denham's Bustard	<i>Neotis denhami</i>	NT
Lowland Bongo antelope	<i>Tragelaphus eurycerus</i>	NT
Western yellow backed duiker	<i>Cephalophus silvicultor castaneus</i>	NT
White-bellied Duiker	<i>Cephalophus leucogaster</i>	NT
White-naped Pigeon	<i>Columba albinucha</i>	NT
Yellow-backed Duiker	<i>Cephalophus silvicultor</i>	NT

Flora

Vegetation in Chinko is determined by the vegetation zones of the northern Congolian forest-savanna mosaic and the north-eastern Congolian lowland forest (Blom et al., 2004). The CCA contains large areas of successively dense forests which are dominated by large trees and shrubs, forming a heterogeneous ecotone of pristine moist forest and open savanna woodlands (Aebischer et al., 2017).

First preliminary results from the vegetation inventories and biomass plots show that the structure of rain forests in the CCA is as complex, stratified and high as major rain forests in South America or primary forests in Borneo. This finding is remarkable given the fact that forests in Eastern CAR are mainly riverine gallery forests and relatively small and fragmented at the edge of the Congo rain forest.

Preliminary results of the REDD+ vegetation inventory showed the presence of certain typical rain forest like the critically endangered Mukulungu (*Austranella congolensis*) the endangered Wenge tree (*Millettia laurentii*) and true African ebony (*Diospyros crassiflora*). These species are heavily exploited all over their range and Chinko is a valuable stronghold for major individuals and might be crucial for the long-term preservation of a diverse gene pool for this economically important tree species. Other species found are: *Azelia Africana*, *Azelia bipindensis*, *Mitragyna stipulosa* and *Pterygota macrocarpa*, all vulnerable and *Pouteria altissima*, a conservation dependent species.

Threats to biodiversity

Hunting, poaching and the illegal wildlife trade, is the largest threat to biodiversity in this region; local people hunt in the savannas throughout the year, but tend to hunt intensively during the rainy season. The main hunting methods used are trapping with snares and hunting with nets and guns. Hunting in this region consists of small-scale legal hunting for mostly local consumption, small-scale illegal hunting (poaching) by relatively local actors and large-scale poaching for commercial purposes. The distinction between small- and large-scale poaching is usually determined by the number of animals killed and the size of the operation. When small animals are hunted for commercial gain, they will be slaughtered in huge numbers, in comparison to a few being killed for local consumption only. Large-scale hunting can also be easily identified by the size of the animals being targeted and of the type of weapons used to kill them. The bigger the animal, the more likely it is to be under threat, which means that it is going to be a protected species. Larger animals are also more likely to be highly dangerous, therefore, the stakes are that much higher. (Ondoua Ondoua, G. et al 2017).

Transhumant pastoralism also poses a threat to biodiversity in this region due to the illegal grazing that occurs. Cattle that are passing through CCA can cause extensive degradation of wildlife habitats, whether it is in terms of water quality, the transmission of diseases, outcompeting wildlife for resources as well as contributing towards poaching and illegal logging. Furthermore, pastoralism in the CAR involves burning the countryside so as to stimulate grass growth, generating degradation of the forest areas and natural grasslands. As transhumant pastoralism has become more intensified in recent years, due to severe droughts and other climatic conditions, it is highly likely that this practice will continue in the country.

Even though there are no communities living inside the CCA, villages that are situated nearby pose a threat, especially concerning the practice of small-scale agriculture, which is common amongst local communities and involves clearing the forest in small areas (approximately 0.6 ha per field). This agricultural practice negatively impacts several ecological functions related to biodiversity conservation, climate regulation and water quality in the region.

5.1.2 High Conservation Values (B1.2)

High Conservation Value	Chinko Conservation Area Zone
Qualifying Attribute	This area consists of the entire Sudano-Guinean savanna, with sections of the north-eastern Congolian lowland rainforest as well as the Chinko and Mbari rivers. The area comprises parts of the last continuous savannah and rainforest ecotone ecosystems in Africa (Hickisch & Aebischer, 2013) which is the habitat for several endangered species, including the African wild dog (<i>Lycaon pictus</i>), chimpanzee (<i>Pan troglodytes</i>) and the African savanna elephant (<i>Loxodonta africana</i>), among others. Although, the Chinko core zone is one of only a few areas that has a fully trained rangers' team that protect the wildlife, prevent illegal poaching and incursion from cattle herds due to pastoralism.
Focal Area	Chinko Conservation Area.

High Conservation Value	Chinko and Mbari Rivers
Qualifying Attribute	Chinko's western and eastern boundaries are the Mbari and Chinko rivers, respectively. These are tributaries of the Bangui river, which later on became the Ubangi river. These rivers are important to the establishment and maintenance of the forest inside Chinko; it is imperative to understand that these are permanent rivers which also support the wildlife that depend on it for survival.
Focal Area	Western and eastern boundaries of the Chinko Conservation Area.

High Conservation Value	Threatened or endangered species
Qualifying Attribute	According to previous studies in the project area, there are 80 large mammal species in the region (>100g). There are 26 species of carnivores, including top predators such as the endangered African wild dog, the highly vulnerable Northern lion and nine different species of mongoose, along with 11 primate species including Eastern chimpanzees, 24 even-toed ungulates, including Eastern giant eland, bongo antelope, Lelwel hartebeest, eight different species of duikers as well as five ant-eating mammals, including all four species of the African pangolin.
Focal Area	Chinko Conservation Area.

5.1.3 Without-project Scenario: Biodiversity (B1.3)

As previously stated, the project area is uninhabited. There are, however, a number of activities that currently take place in, and around, the area that have a direct impact on the biodiversity of the region. These activities include unsustainable hunting practices and the illegal wildlife trade, transhumant pastoralism and unsustainable agricultural practices, amongst others. Without the project, it is highly likely that these activities would continue, which would have a negative impact on the biodiversity of the project area.

The practice of pastoralism (transhumance) is common in Eastern CAR (Luizza, 2017). Pastoralism involves the strategic mobility of cattle through the landscape searching for water and grazing resources in areas of high rainfall variability. It is estimated that there are over 2 million cattle in the CAR. Moreover, in the country pastoralism involves burning the countryside in order to stimulate grass growth and allow for ease of movement, generating degradation of the forest areas and natural grasslands. In the project area, transhumant herders from Sudan and the CAR, represent the biggest challenge to the conservation and sustainability of the protected area. Pastoralism results in extensive degradation of wildlife habitats in terms of water quality, the transmission of diseases and cattle outcompeting with indigenous wildlife for resources. Transhumant pastoralists passing through the project area also practice poaching and illegal logging, which further impacts the biodiversity of the area. Transhumant pastoralism has been intensified in recent years due to severe droughts and other climatic conditions, as well as the tumultuous conflicts that are occurring

in the surrounding countries (Sudan and South Sudan): it is expected that pastoralism will continue to intensify in the project area.

Without the projects unsustainable hunting practices, poaching, both on a small and commercial scale, and the illegal wildlife trade are likely to not only continue but intensify in the project area. The reason for this is because the high demand for meat and ivory by organised Sudanese poachers, and the demand for meat, fish and skin/scale by commercial poachers for exportation to the DRC. Unsustainable hunting and poaching will continue to take an enormous toll on tropical mammals, birds, reptiles and fish species in the project area. It is widely recognized that the loss of vertebrate populations can disrupt plant-animal interactions, threatening the integrity of natural ecosystems. Hunting can also alter the rate of pre-dispersal predation, seed dispersal, seed predation, seedling predation and herbivory. Any sort of change to these processes can have cascading effects for species composition, diversity and the structure of plant communities (Poulsen, Clark, & Palmer, 2013).

The agricultural practices of sedentary communities living on the periphery of the project area are currently unsustainable: local farmers clear sections of the forest to plant their crops. Current agricultural practices are likely to continue and result in further degradation of the landscape. Without the project these agricultural practices will more than likely extend into the protected area, which would transform areas of the primary forest into a degraded mosaic.

Other unsustainable practices such as illegal gold mining that uses highly toxic chemicals, as well as logging, will also cause heavy erosion and micro-climate changes that would seriously affect biodiversity in the project area. Even though there are no large-scale mining or logging concessions occurring at present, the situation could change if the project was to no longer be present. Without the project the physical destruction and pollution of rivers linked to mining, logging and expansion of agriculture, will occur in the project area in the future.

5.2 Net Positive Biodiversity Impacts

5.2.1 Expected Biodiversity Changes (B2.1)

Biodiversity Element	Landscape connectivity
Estimated Change	Positive
Justification of Change	The Chinko Conservation Area in the eastern part of CAR, in the ecotone between the pristine moist forest and the open savanna woodlands, making the area one of the most diverse in the country. Here, habitats for different species are generated as they move from the savanna area into the forest area, making Chinko a central location that can provide shelter and transit zones for fauna. In addition, Chinko is surrounded by the Bangassou forest in the western part, which comprises the largest forest patch in eastern CAR (Aebischer et al., 2017), and the Zemongo Faunal Reserve in the eastern part. Moreover, the area is also connected with the eastern and western Bomu wildlife reserves in the Democratic Republic of the Congo (Figure 37).

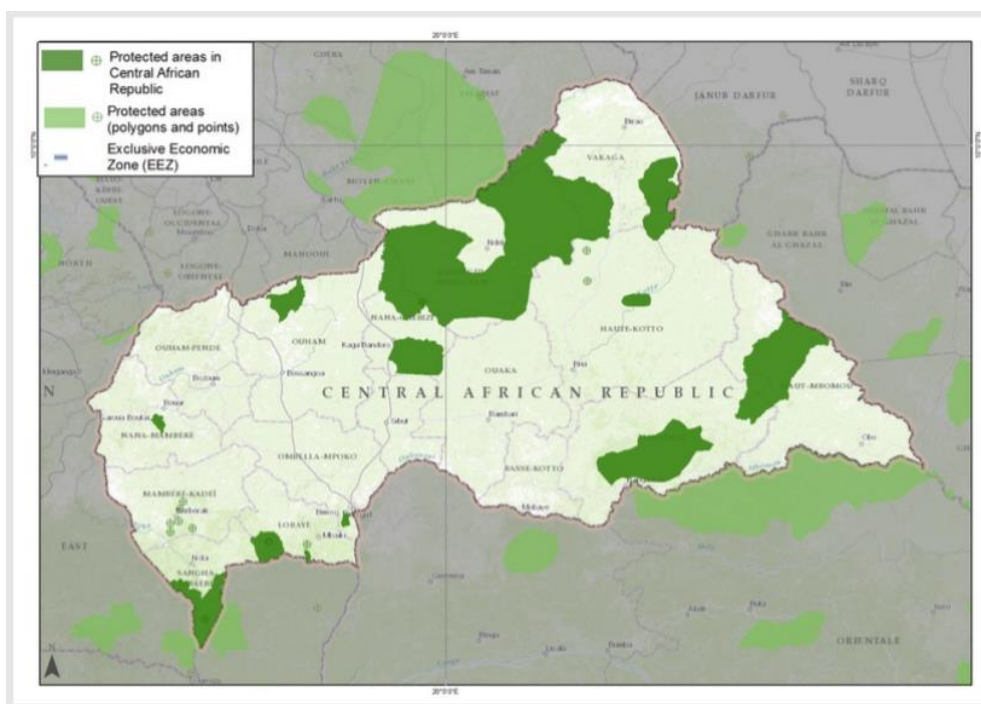


Figure 37: Protected area in the Central African Republic

Source: (BIOPAMA, 2015)

Biodiversity Element	Fauna (Threatened and endangered species)
Estimated Change	Positive
Justification of Change	The area contains several (15 species) vulnerable and endangered species, including the eastern chimpanzee (EN) (<i>Pan troglodytes schweinfurthii</i>), the African wild dog (EN) (<i>Lycaon pictus</i>), four species of pangolin present in Africa (VU), the African savanna elephant (VU) (<i>Loxodonta africana</i>), and big cats, including the northern African lion and the African leopard. The management of the area creates a safe place for wildlife, with them being protected by a team of rangers that patrol the area against illegal poaching and attempt to prevent conflicts with any of the pastoralism activities.

5.2.2 Mitigation Measures (B2.3)

Strategic Lines	Main activities to be implemented
Reduce poaching	- Core protection area expanded gradually. - Recruit, train and equip a sufficient number of Chinko rangers, eco-monitors, camp security guards and transhumance sensitisation officers.

Strategic Lines	Main activities to be implemented
	• Ensure that local laws with appropriate penalties are implemented at government level to ensure effective prosecutions and sentences. • Further develop an informant network with an associated incentive scheme which will act as an Early Warning System and information sharing platform.
Fire Management	• Keep fires as small as possible and burn sequentially. The wildlife and vegetation in the savanna of Eastern CAR are used to fires, which means that no special measurements need to be implemented.
Transhumance sensitisation	• Recruit sensitisation officers. • Establish Land Use Plan, including all required wildlife corridors and exclusion zones (inclusion of transhumance strategy).
Natural resources exploitation	• Establish buffer areas for sustainable fishing, hunting and the use of non-timber products.

5.2.3 Net Positive Biodiversity Impacts (B2.2, GL1.4)

Chinko/Mbari drainage basin is one of very few places where conditions for vegetation, habitats and ecological and evolutionary processes in pristine areas that have minimal human influence can take place (*Hickisch & Aebischer, 2013*).

However, the low human influence near Chinko can still impact the ecosystems and biodiversity if it is not controlled. As mentioned previously, the project area is threatened by transhumant pastoralism, unsustainable hunting practices and agriculture, which will undoubtedly continue in the future without the project.

With project activities already planned, negative effects from poaching or natural resources exploitation will be kept out of the project area, which will provide better conditions for biodiversity in terms of refuge and provision of ecosystem services such as food and shelter. In addition, management activities and sensitisation regarding the transhumant pastoralism practice will reduce the impact on the natural ecosystems and fauna, favouring the protection of vulnerable and endangered species.

Therefore, the net impact on biodiversity will be positive because of the protection of the ecosystems in the project area, as well as the conservation of vulnerable species which have their habitats in the park. Moreover, the management and sensitisation of transhumant pastoralism practice will improve conditions in the park, with specific zones for the movement of herds, reducing the impact on fauna from poaching and habitat degradation.

5.2.4 High Conservation Values Protected (B2.4)

As mentioned previously, the CCA has the capacity to conserve the biodiversity present in the ecotone of the savanna and rainforest areas. Furthermore, due to the nature of the activities proposed for implementation, no high conservation values are expected to be negatively affected. In fact, most of the activities are focused on protecting and improving the conservation of the biodiversity, including the high conservation values. It is highly likely that some activities such as poaching or illegal hunting will take place outside of the area and could have a negative impact on the HCV, however, mitigation measures like the training of rangers, the establishment of buffer zones with sustainable practices and the improvement of the management of the area, will reduce any possible risks and affectations.

5.2.5 Species Used (B2.5)

The project does not contemplate the use of species.

5.2.6 Invasive Species (B2.5)

The project does not contemplate the use of invasive species.

5.2.7 Impacts of Non-native Species (B2.6)

No non-native species are used in the project zone as part of the project.

5.2.8 GMO Exclusion (B2.7)

No GMOs are used to generate GHG emissions reductions or removals.

5.2.9 Inputs Justification (B2.8)

No fertilizers, chemical pesticides, biological control agents and other inputs are used for the project.

5.2.10 Waste Products (B2.9)

No waste products are generated in the project activities.

5.3 Offsite Biodiversity Impacts

5.3.1 Negative Offsite Biodiversity Impacts (B3.1) and Mitigation Measures (B3.2)

It is likely that some negative impacts to biodiversity could take place outside of the project area, caused by law enforcement in the core area moving the hunting and poaching activities to the periphery of the project area. Thus, it is important that the management activities include local communities and transhumance pastoralism, in order to promote and control hunting activities and the sustainable use of natural resources, as well as working together with the government to ensure that regulations on poaching are enforced and that those who engage in these practices are penalised.

This means that the mitigation measures proposed to ensure that biodiversity is not affected inside the project area can be applied outside the area as well, which will also encourage the surrounding communities that their actions do not result in negative impacts on forest and fauna conservation. See section 5.2.2.

5.3.2 Net Offsite Biodiversity Benefits (B3.3)

By introducing mitigation measures, the negative impacts on biodiversity inside and outside the project area will be reduced. The mitigation measures will focus on local communities and transhumance pastoralism, which are essentially the same people who inhabit the surrounding areas of the project area. Therefore, the REDD+ project will offer benefits for biodiversity, especially when we compare these results with those calculated without a project assessment. Thanks to the project activities, vulnerable and endangered species will be impacted in a positive way, with their habitats being protected and the amount of poaching and illegal hunting occurring being dramatically reduced. Furthermore, by managing transhumance pastoralism in the area this will reduce affectations on the natural ecosystems in the area, which support more than 70 mammal species in the park, including key species such as chimpanzees, elephants, wild dogs, lions and hippopotamuses, among others.

5.4 Biodiversity Impact Monitoring

5.4.1 Biodiversity Monitoring Plan (B4.1, B4.2, GL1.4, GL3.4)

To sufficiently monitor the impact the project has on biodiversity within the project area landscapes, ecosystems and species shall be assessed (Table 23). The proposed monitoring plan aims to secure the biodiversity of the project area.

The main objective will be the restoration and maintenance of the ecosystem, so as to preserve maximal biodiversity and species numbers, and to allow natural ecological processes to flourish. Due to the high volume and various characteristics of the species present in the project area, multiple sampling methods have to be implemented when monitoring so as to reduce the possibility of the non-detection of species of interest:

- The camera traps are a cost-effective tool for large-scale monitoring of medium and large vertebrates (Buyaskas, Evans, & Mortelliti, 2020). It is important to have data about the location of the cameras with GPS, dates of installation and a physical description of the area where the camera is going to be installed.
- The track counts and sightings on trails enable the detection of direct or indirect records of species such as footprints, shelters and bones, among others. The tracks are made on paths, trails or roads, and could be done during rangers' patrols. The tracks should be georeferenced, with the date and time being registered, in addition to a physical description of the area.
- The ultralight motorized aircraft (ULM) surveys are an efficient way to monitor the environment and wildlife over large areas (Linchant, Lisein, Semeki, Lejeune, & Vermeulen, 2015). It is important to have a standardise approach for the survey; The area of the project should be divided into transects with a standard separation. The transects should be flown systematically following a direction, for example, north to south, with a specific speed and height. It is important to record the surveys using GPS.
- Satellite collars would normally be used on the animal's neck. A GPS-enabled device will usually record and store the location data at a pre-determined interval or on interrupt by an environmental sensor.

Table 23: Targets to monitor

Objectives	Targets	Sampling method	Areas to be monitored	Results
Continuous review and amendment of zoning in relation to key species and habitats for effective management and appropriate protection.	- Provide a comprehensive map with large wildlife biomass hot-spots. - Key species distribution. - High value habitats.	Camera traps	Former hunting block, 36 Trois Rivières.	No. of independent detections
		Sightings on trails	Eastern zones, Vovodo-Chinko.	No. of sightings on trails
		ULM surveys	- Hunting zone of Alain Lefol and sahelo-sudanian. - Shrubland of Yata-Ngaya.	Reports from the ULM surveys
Monitor wildlife and human activities so as to optimise conservation activities and strategies.	Annual baseline monitoring of fauna.	Camera traps	Chinko Conservation Area.	No. of independent detections
		Sightings on trails		No. of sightings on trails
		ULM surveys		Reports from the ULM surveys
		Satellite collars		No. of satellite collars installed and that are active
Monitor vulnerable and endangered species to secure their permanence in the Chinko Conservation Area.	Annually monitor vulnerable and endangered species with special focus on <i>Pan troglodytes schweinfurthii</i> , <i>Lycaon pictus</i> and <i>Loxodonta Africana</i> .	Camera traps	Chinko Conservation Area.	No. of independent detections
		Sightings on trails		No. of sightings on trails
		ULM surveys		Reports from the ULM surveys
		Satellite collars		No. of satellite collars installed and that are active

5.4.2 Biodiversity Monitoring Plan Dissemination (B4.3)

The monitoring plan and all of the documents and information about the results of the monitoring and verification of this project will be published on the VERRA platforms. In African Parks annual reports, it also includes the main information of the biodiversity results.

Communities and other stakeholders will be also informed of the main results.

5.5 Optional Criterion: Exceptional Biodiversity Benefits

The project hopes to achieve the Gold Level for exceptional biodiversity benefits due to the presence of at least four critically endangered, eight endangered and 17 vulnerable fauna species being in the area according to the IUCN (see Table 22). In addition, preliminary results of the vegetation inventory showed the presence of certain typical rain forest like the critically endangered Mukulungu (*Autranella congolensis*) the endangered Wenge tree (*Millettia laurentii*) and true African ebony (*Diospyros crassiflora*).

5.5.1 High Biodiversity Conservation Priority Status (GL3.1)

The Chinko Conservation Area conserves threatened fauna species including at least four critically endangered, eight endangered, as well as 17 vulnerable species according to the IUCN Red List (see Table 22).

Aebischer and associates have been studying the biodiversity of the Chinko/Mbari drainage basin, focusing on African elephants (Hickisch & Aebischer, 2013) (Figure 38), African wild dogs (Hickisch, 2013) (Figure 39), chimpanzees (Aebischer et al., 2017) (Figure 40) and Eastern derby eland (Brandlová et al., 2018). During the annual survey of the area, at least 800 chimpanzees; 50 elephants; 2788 buffalo; 437 giant eland; at least 76 African wild dogs and 30 lions were documented.⁷¹

⁷¹ Obtained from: African Parks Annual Report 2018, available at: <https://www.africanparks.org/about-us/financials-and-annual-reports>



Figure 38: Forest elephants (*Loxodonta africana*) in the project area

Source: (Hickisch & Aebischer, 2013)

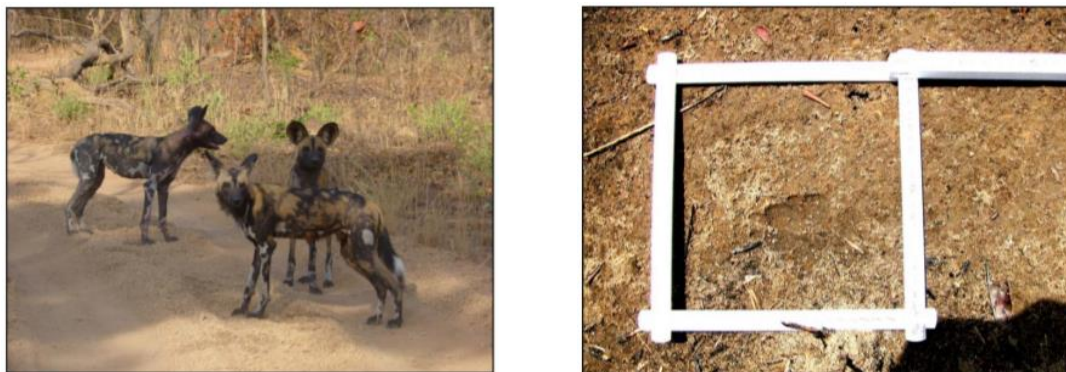


Figure 39: African wild dogs (*Lycaon pictus*) and track records in the project area

Source: (Hickisch, 2013).

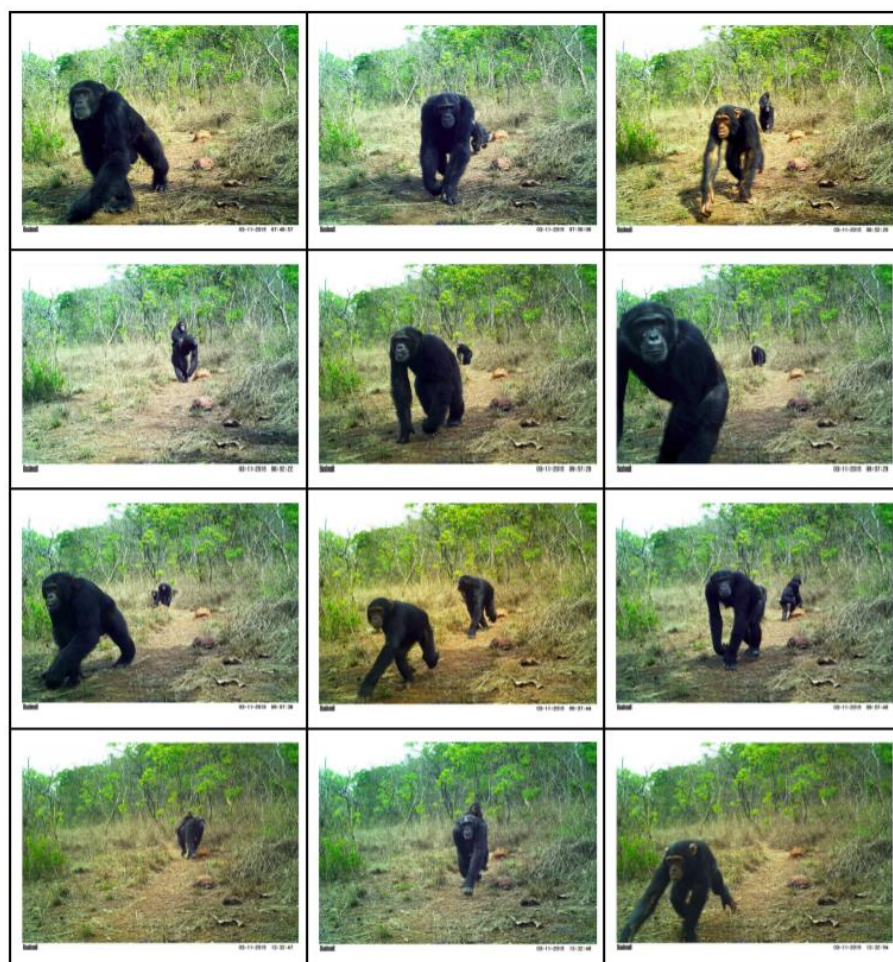


Figure 40: Individuals of Chimpanzees (*Pan troglodytes schweinfurthii*) in the project area

Source: (Aebischer et al., 2017)

5.5.2 Trigger Species Population Trends (GL3.2, GL3.3)

Trigger Species	Eastern Chimpanzee (<i>Pan troglodytes schweinfurthii</i>)
Population Trend at Start of Project	According to the 2018 annual survey, the population was between 800 and 1,000.
Without-project Scenario	Habitat loss and poaching will affect chimpanzees the most in the without project scenario.
With-project Scenario	The Chinko Conservation Area has undertaken numerous actions regarding law enforcement and sensitisation in relation to transhumance pastoralism, in order to reduce the affectation of natural habitats and ongoing poaching. The Chinko/Mbari area has some of the largest habitats and populations of chimpanzees.

Trigger Species	African wild dog (<i>Lycaon pictus</i>)
Population Trend at Start of Project	According to the 2018 annual survey, a total of 76 individuals were documented.
Without-project Scenario	Habitat loss and hunting by retaliation of the species would likely occur in the without project scenario.
With-project Scenario	Project activities will contribute to the conservation of the species through the protection of their natural habitats, an improvement in connectivity between the area and its surroundings and a reduction in pressure of human conflicts.

Trigger Species	African Savanna Elephant (<i>Loxodonta Africana</i>)
Population Trend at Start of Project	According to the 2018 annual survey, between 50 and 150 individuals were documented.
Without-project Scenario	Habitat loss and hunting by retaliation for crop damage are likely to occur in the without project scenario.
With-project Scenario	Project activities will contribute to the conservation of the species by protecting their natural habitats and reducing the pressure for human conflicts. Landscape connectivity is also important as part of the with-project scenario for this species.

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APPENDICES

Appendix 1: Project Document Requirements

Table 24 below present the different requirements of the methodology and the section when can be found if applicable.

Table 24: Project Document Requirements table

PDR #	Category	Requirement	Section
PDR 1	Applicability Conditions	For each applicability condition, a statement of whether it applies to the project. If the applicability condition does not apply to the project, justification for this conclusion.	3.1.2 - Table 5: Applicability conditions
PDR 2	Applicability Conditions	Where applicability conditions apply, credible evidence in the forms of analysis, documentation, or third-party reports to satisfy the condition.	3.1.2 - Table 5: Applicability conditions
PDR 3	Applicability Conditions	Definition of forest used by the project proponent and its source.	3.1.2 - Table 5: Applicability conditions
PDR 4	Spatial Boundaries Project	A digital (GIS-based) map of the project area with at least the above minimum requirements for delineation of the geographic boundaries.	3.1.3 - Figure 10: Spatial boundaries
PDR 5	Spatial Boundaries Project	Credible documentation demonstrating control of the project area, or documentation that the provisos listed in the case of less than 80% project control at the time of validation delineated in section 5.1 of the methodology are met.	2.5.9
PDR 6	Temporal Boundaries Project	The project start date.	3.1.3 - Temporal boundaries
PDR 7	Temporal Boundaries Project	The project crediting period start date and length.	3.1.3 - Temporal boundaries
PDR 8	Temporal Boundaries Project	The dates for mandatory baseline re-evaluation after the project start date.	3.1.3 - Temporal boundaries
PDR 9	Temporal Boundaries Project	A timeline including the first anticipated monitoring period showing when project activities will be implemented.	3.1.3 - Temporal boundaries
PDR 10	Temporal Boundaries Project	A timeline for anticipated subsequent monitoring periods.	3.1.3 - Temporal boundaries

PDR #	Category	Requirement	Section
PDR 11	Carbon Pools	A list of the greenhouse gases considered.	3.1.3 - Table 6: Included GHG Sources
PDR 12	Carbon Pools	A list of the selected carbon pools and evidence for the conservative exclusion of any optional pools.	3.1.3 - Table 7
PDR 13	Carbon Pools	The definition and evidence to support the definition of a merchantable tree if the baseline scenario or project activities include logging.	N/A
PDR 14	Grouped Projects	A list and descriptions of all enrolled project activity instances in the group at the time of validation.	3.1.3 - Spatial boundaries
PDR 15	Grouped Projects	A map of the designated geographic area within which all project activity instances in the group will be located, indicating that all instances are in the same region.	3.1.3 - Figure 10: Spatial boundaries
PDR 16	Grouped Projects	A map of the common reference area, proxy area, activity- shifting leakage area, and market leakage area.	3.1.3 - Figure 10: Spatial boundaries
PDR 17	Determining the Baseline Scenario	Show that the identified baseline type is the most plausible baseline scenario identified in section 7.	3.1.4
PDR 18	Agents and Drivers of Conversion	A list of the agents and drivers of conversion, including quantitative descriptions of agent mobilities.	3.1.4 - Identification of Agents and Drivers of Deforestation
PDR 19	Agents and Drivers of Conversion	A narrative describing the agents and drivers of conversion.	3.1.4 - Identification of Agents and Drivers of Deforestation
PDR 20	Agents and Drivers of Conversion	Descriptions of agents and drivers including any useful statistics and their sources.	3.1.4 - Identification of Agents and Drivers of Deforestation
PDR 21	Agents and Drivers of Conversion	A list of external drivers (covariates) of conversion used in the model, if any, that may be identified as part of a PRA, expert knowledge, or literature (eg, median household income, road density, rainfall).	N/A
PDR 22	Project Accounting Areas	A digital (GIS-based) map of the project accounting areas, including aerial or satellite imagery showing that they are	3.1.4 - Figure 17: Project accounting areas

PDR #	Category	Requirement	Section
		forested as of the project start date and 10 years prior to the project start date.	
PDR 23	Project Accounting Areas	Justify the project accounting areas using the identified agents and drivers of conversion, constraints to conversion, and attributes listed in section 6.2.	3.1.4 - Delineating Project Accounting Areas
PDR 24	Project Accounting Areas	Selection of patch size at which land conversion typically occurs.	3.1.4 - Delineating Project Accounting Areas
PDR 25	Project Accounting Areas	Justification of selection of patch size for delineation of project accounting area.	3.1.4 - Delineating Project Accounting Areas
PDR 26	Identifying the Baseline Type - Forest	If Types F-P1.a, F-P1.b or F-P2 are selected, justification for meeting the definition of APD in the current VCS-approved AFOLU Requirements.	N/A
PDR 27	Identifying the Baseline Type - Forest	If Type F-P1.a or F-P1.b is selected, evidence of legally-sanctioned commercial harvest in the baseline scenario.	N/A
PDR 28	Identifying the Baseline Type - Forest	If Type F-P1.a is selected, evidence of legally-sanctioned deforestation in the baseline scenario	N/A
PDR 29	Identifying the Baseline Type - Forest	If Type F-P1.b is selected, evidence of frontier configuration: Projects must demonstrate that the agent of degradation had access to the project area AND that comparable agents create roads for extraction of timber AND/OR Projects may produce permits, construction plans, contracts or tenders, budgets, or other evidence of the intent to construct roads.	N/A
PDR 30	Identifying the Baseline Type - Forest	If Type F-U1 is selected, a spatial analysis of the project area showing that at least 25% of the perimeter is within 120 meters of deforestation that occurred within 10 years prior to the project start date and showing that the	N/A

PDR #	Category	Requirement	Section
		reference area is adjacent to at least 25% of the project area.	
PDR 31	Identifying the Baseline Type - Forest	If Type F-U2 is selected, a spatial analysis of the project area showing that at least 25% of the perimeter is within 120 meters of deforestation that occurred within 10 years prior to the project start date.	N/A
PDR 32	Identifying the Baseline Type - Forest	If Types F-U1, F-U2 or F-U3 is selected, a spatial analysis of the project area showing that it is within 120 meters of deforestation that occurred within 10 years prior to the project start date.	3.1.4 - Identifying Baselines types, Annex 4
PDR 33	Identifying the Baseline Type - Grassland	If Type G-P2 is selected, justification for meeting the definition of APC in the current VCS-approved AFOLU Requirements. Justification must include evidence of intent to convert the project area and that the converted land-use category would meet the definition of native grassland / shrubland conversion.	N/A
PDR 34	Identifying the Baseline Type - Grassland	If Type G-U1 is selected, a spatial analysis of the project area showing that the reference area is adjacent to at least 25% of the project area.	N/A
PDR 35	Delineation of the Proxy Areas	A map of the delineated boundaries.	3.1.3 - Figure 10: Spatial boundaries
PDR 36	Delineation of the Proxy Areas	Maps or other evidence that the proxy area's site characteristics and landscape configuration is similar to its respective project accounting area, including: Vegetation; Climatic conditions (eg, mean temperature, rainfall, etc.); Topographic constraints to conversion (slope, aspect, elevation); Land use and/or land cover; Soil map (if available) or other soil information; Applicable infrastructure (eg, water ways, roads, railroad,	3.1.3 - Figure 10: Spatial boundaries

PDR #	Category	Requirement	Section
		airports, provision of electricity, and other access points); and Ownership/tenure boundaries that influence conversion (eg, government holdings, private holdings and reserves).	
PDR 37	Delineation of the Proxy Areas	A narrative describing the rationale for selection of proxy area boundaries, including the proxy area's similarity to the corresponding project accounting area with respect to vegetation, soil and climatic conditions.	3.1.4 - Delineating Proxy Areas
PDR 38	Delineation of the Proxy Areas	Results of a spatial analysis to demonstrate the proxy area is converted, on average, as of the project start date.	3.1.4 - Delineating Proxy Areas
PDR 39	Describing the Baseline Scenarios for Selected Carbon Pools	A qualitative description of the baseline scenario for each selected carbon pool.	3.1.4 - Baseline scenarios for selected carbon pools
PDR 40	Delineation of the Reference Area for Planned and Unplanned Types	A map of the delineated boundaries, demonstrating that the reference area was held by the identified baseline agent or agents and does not include the project area.	3.1.3 - Figure 10: Spatial boundaries
PDR 41	Delineation of the Reference Area for Planned and Unplanned Types	Results of a spatial analysis to demonstrate the reference area had as much forest or native grassland as the project accounting area at some point in time during the historic reference period.	N/A
PDR 42	Delineation of the Reference Area for Planned and Unplanned Types	Evidence that the management practices of the baseline agent in the reference area are similar to those that would have been applied to the project accounting area or areas in the baseline.	3.1.4 - Delineating Reference Areas
PDR 43	Delineation of the Reference Area for Planned and Unplanned Types	A description of the rationale for selection of reference area boundaries.	3.1.4 - Delineating Reference Areas

PDR #	Category	Requirement	Section
PDR 44	Delineation of the Reference Area for Planned and Unplanned Types	The documentation required in the reference area selection requirements that the selected reference area meets the Reference Area Selection Requirements.	3.1.4 - Delineating Reference Areas
PDR 45	Defining the Reference Area for Planned Baseline Types	Evidence that secondary agents have been considered in the delineation of the reference area for baseline types F-P1.a and F-P1.b.	N/A
PDR 46	Defining the Reference Period for Planned Types	Established reference period boundaries.	N/A
PDR 47	Defining the Reference Period for Planned Types	The date when the agent acquired control of the reference area or when the land management practices employed in the reference area changed.	N/A
PDR 48	Defining the Reference Period for Unplanned Types	Established reference period boundaries.	3.1.4 - Defining the Historic Reference Period
PDR 49	Defining the Reference Period for Unplanned Types	A list of available historic imagery for the reference area.	3.1.4 - Defining the Historic Reference Period – Annex 5
PDR 50	Defining the Reference Period for Unplanned Types	A timeline of important events as they relate to the agents and drivers of conversion.	3.1.4 - Defining the Historic Reference Period
PDR 51	Defining the Reference Period for Unplanned Types	Narrative rationale for the selection of the reference period.	3.1.4 - Defining the Historic Reference Period
PDR 52	Historic Imagery to Parameterize α , β and θ	A map of the reference area showing the area of "double- coverage".	3.1.4 - Figure 24
PDR 53	Historic Imagery to Parameterize α , β and θ	Quantification of "double coverage"(greater than 90%).	3.1.4 - Selecting historical imagery
PDR 54	Historic Imagery to Parameterize α , β and θ	A line plot of the historic image dates to confirm stationarity.	3.1.4 - Figure 23
PDR 55	Historic Imagery to Parameterize α , β and θ	Evidence that all image pixels are not more than 30m x 30m.	3.1.4 - Table 11
PDR 56	Historic Imagery to Parameterize α , β and θ	Empirical evidence that imagery is registered to within 10% RMSE, on average.	3.1.4 - Selecting historical imagery

PDR #	Category	Requirement	Section
PDR 57	Sampling Conversion to Parameterize α , β and θ	The sample size.	3.1.4 - Table 12
PDR 58	Sampling Conversion to Parameterize α , β and θ	A map of the reference area showing the sample point locations.	3.1.4 - Figure 24
PDR 59	Parameterizing α , β and θ	The covariates that were considered and their data sources.	N/A
PDR 60	Parameterizing α , β and θ	The parameters in θ that were evaluated during model selection.	N/A
PDR 61	Parameterizing α , β and θ	The parameters in θ of the selected model.	N/A
PDR 62	Parameterizing α , β and θ	The rationale used for selecting θ including comparisons of AIC.	N/A
PDR 63	Minimizing Uncertainty in Parameters $\hat{\alpha}$, $\hat{\beta}$ and $\hat{\theta}$	A protocol for interpreting land cover state from imagery, which must include guidance for interpreting the following: - Discerning conversion features using shape, texture and context in the reference area landscape - Addressing seasonal variation of vegetation (phenology) within imagery - Identifying and addressing the characteristics of specific landscape configurations (ie, mosaic forest, grassland, etc.)	3.1.4 - Minimizing Uncertainty
PDR 64	Minimizing Uncertainty in Parameters $\hat{\alpha}$, $\hat{\beta}$ and $\hat{\theta}$	The results of an independent check of the interpretation.	3.1.4 - Minimizing Uncertainty
PDR 65	Minimizing Uncertainty in Parameters $\hat{\alpha}$, $\hat{\beta}$ and $\hat{\theta}$	Evidence that systematic errors, if any, from the independent check of the interpretation were corrected.	3.1.4 - Minimizing Uncertainty
PDR 66	Estimating Uncertainty in Parameters $\hat{\alpha}$, $\hat{\beta}$ and $\hat{\theta}$	The estimated uncertainty σ_{EM} from [F.13] and statistical summaries from model fitting software, if available.	3.1.4 - Table 13
PDR 67	Estimating Uncertainty in Parameters $\hat{\alpha}$, $\hat{\beta}$ and $\hat{\theta}$	Reference to uncertainty calculations.	3.1.4 - Estimating Uncertainty
PDR 68	Parameterizing t_{SA}	The parameter $\hat{t}_{SA}$ as the number of days after the primary agent begins commercial logging until when the secondary agent of deforestation is	N/A

PDR #	Category	Requirement	Section
		likely to begin degrading the project accounting area.	
PDR 69	Parameterizing t_{SA}	A description of how $\hat{t}_{SA}$ was obtained.	N/A
PDR 70	Parameterizing t_{SA}	Harvest plans for the project accounting area under the baseline scenario, results from the PRA or analysis of the reference area to determine the parameter.	N/A
PDR 71	Parameterizing t_{PA}	The parameter $\hat{t}_{PA}$ as the number of days relative to the project start date when the primary agent began or would have begun legally sanctioned commercial logging in the project accounting area.	N/A
PDR 72	Parameterizing t_{PA}	A description of how $\hat{t}_{SA}$ was obtained.	N/A
PDR 73	Parameterizing t_{PA}	Harvest plans for the project accounting area under the baseline scenario or public records to support the determination of the parameter.	N/A
PDR 74	Determining x_0	A table of covariate values as of the project start date and a description of how the values were determined including any interpolation or extrapolation methods.	N/A
PDR 75	Determining x_0	Justification for why the rate of conversion predicted by covariates exceeds the rate indicated from historical conversion patterns.	N/A
PDR 76	Parameterizing m	The parameter m as the average carbon in merchantable trees cut each year as a result of legally sanctioned commercial logging.	N/A
PDR 77	Parameterizing m	Documentation of how m was determined. This may include an analysis of carbon stocks in merchantable trees in the project accounting area, timber harvest plans for the project accounting area or reference to a publication containing the maximum allowable cut applicable to the project area. The parameter must be greater than zero.	N/A

PDR #	Category	Requirement	Section
PDR 78	Determining γ	The project shift parameter γ as the number of days between the beginning of the historical reference period and the project start date.	N/A
PDR 79	Parameterizing q	The parameter q as the number of days between the onset of degradation and the beginning of conversion.	3.1.4 - Determining q
PDR 80	Parameterizing q	If the default of zero is not selected for q , then a justification for the determination of q .	N/A
PDR 81	Parameterizing r_u	The parameter r_u as the ratio of converted perimeter to total threatened perimeter, or the ratio of converted area to total project accounting area(s), as of the project start date.	3.1.4- Table 14
PDR 82	Parameterizing r_u	Description of how r_u was obtained.	3.1.4 - Determining r_u
PDR 83	Parameterizing r_u	Results of GIS analysis to determine or measure r_u in the project area including the dates of images used to identify conversion.	3.1.4 - Table 14
PDR 84	Empirically Estimating λ_{SOC}	Description of how samples from the reference area were selected including stratification, if any.	N/A
PDR 85	Empirically Estimating λ_{SOC}	A map of sample locations in the reference area.	N/A
PDR 86	Empirically Estimating λ_{SOC}	A table showing the conversion time for each area (farm or otherwise) from which samples were taken.	N/A
PDR 87	Empirically Estimating λ_{SOC}	Description of and statistics for the method applied to estimate λ_{SOC} .	N/A
PDR 88	Empirically Estimating λ_{SOC}	Graph of projected decay model over project lifetime.	N/A
PDR 89	Literature Estimates for λ_{SOC}	Inclusion of decay model on which parameter is based.	N/A
PDR 90	Literature Estimates for λ_{SOC}	Explicit description of referenced literature, including project location, sampling methodology, included species, sample size, duration of field experiments, and decay parameter upon which decay is based.	N/A

PDR #	Category	Requirement	Section
PDR 91	Literature Estimates for λ_{SOC}	Graph of projected decay model over project lifetime.	N/A
PDR 92	Literature Estimates for λ_{SOC}	If decay model is based on any other element besides carbon, defence of ability to predict carbon decay must be provided.	N/A
PDR 93	Baseline Re-evaluation	All required documentation as specified in section 6 for the project prior to the baseline re-evaluation.	N/A
PDR 94	Baseline Re-evaluation	All required documentation as specified in section 6 for the project after the baseline re-evaluation including the re-evaluation period.	N/A
PDR 95	Baseline Re-evaluation	A narrative of the re-evaluation including any obstacles and how they were overcome.	N/A
PDR 96	Re-evaluation of the Reference Area and Period	A map of the new reference area.	N/A
PDR 97	Re-parameterization of α , β and θ	Summary of new data observed in the new reference area.	N/A
PDR 98	Re-parameterization of α , β and θ	The re-parameterized values $\hat{\alpha}$, $\hat{\beta}$ and $\hat{\theta}$	N/A
PDR 99	Demonstration of Project Additionality	A list of alternative land use scenarios to the project.	3.1.5
PDR 100	Demonstration of Project Additionality	Justification for the selected baseline scenario. This justification can include expert knowledge, results from the participatory rural appraisal and ex-ante estimates of avoided emissions (see sections 6.1 and 8.4.7).	3.1.5
PDR 101	Demonstration of Project Additionality	An investment or barriers analysis proving that the project is not the most economical option.	3.1.5
PDR 102	Demonstration of Project Additionality	A common practice analysis including a list of project activities and the drivers of conversion that they address.	3.1.5
PDR 103	Demonstration of Project Additionality	Evident compliance with the minimum requirements of the aforementioned VCS tool. This evidence may be the same as the evidence provided to meet	3.1.5

PDR #	Category	Requirement	Section
		reporting requirements listed in section 4.	
PDR 104	Leakage Mitigation Strategies	A list of project activities designed to mitigate leakage.	0 and Leakage Mitigation Strategies
PDR 105	Delineation of the Activity-Shifting Leakage Area	A map of the delineated boundaries.	3.2.3 - Figure 32: Leakage area
PDR 106	Delineation of the Activity-Shifting Leakage Area	Maps of the landscape configuration, including: a. Topography (elevation, slope, aspect); b. Recent land use and land cover (either a thematic map created by the project proponent or publicly available map); c. Access points; d. Soil class maps (if available); e. Locations of important markets; f. Locations of important resources like waterways or roads; and Land ownership/tenure boundaries.	3.2.3 - Figure 32: Leakage area
PDR 107	Delineation of the Activity-Shifting Leakage Area	A narrative describing the rationale for selection of activity-shifting leakage area boundaries. If the activity-shifting leakage area is smaller than the project accounting area or cannot be defined, justification for the size of the area. If foreign agents have been identified as an agent of conversion, justification that they are unlikely to shift their activities outside the activity-shifting leakage area.	3.2.3 - Delineating the Activity-Shifting Leakage Area
PDR 108	Delineation of the Activity-Shifting Leakage Area	Results of a spatial analysis to demonstrate the activity-shifting leakage area is entirely forested as of the project start date.	Annex 3

PDR #	Category	Requirement	Section
PDR 109	Delineation of the Activity-Shifting Leakage Area	Results of a spatial analysis to demonstrate the activity-shifting leakage area is no larger than the project accounting area.	3.2.3 - Figure 32: Leakage area
PDR 110	Determining the Market Discount Factor	The selected discount factor pL ME.	N/A
PDR 111	Determining the Market Discount Factor	Calculations of cL AGMT in the market leakage area, including references to literature if cited.	N/A
PDR 112	Determining the Market Discount Factor	Justification for the selection of the discount factor.	N/A
PDR 113	Delineation of the Market Leakage Area	A map of the delineated boundaries.	N/A
PDR 114	Delineation of the Market Leakage Area	Maps of the landscape configuration, including: a. Topography (elevation, slope, aspect); b. Recent land use and land cover (either a thematic map created by the project proponent or publicly available map); c. Access points; d. Soil class maps (if available); e. Locations of important markets; f. Locations of important resources like waterways or roads; and Land ownership/tenure boundaries.	N/A
PDR 115	Delineation of the Market Leakage Area	A narrative describing the rationale for selection of market leakage area boundaries.	N/A
PDR 116	Delineation of the Market Leakage Area	Results of a spatial analysis to demonstrate the market leakage area is entirely forested as of the project start date.	N/A
PDR 117	Delineation of the Market Leakage Area	Results of a spatial analysis to demonstrate the market leakage area is	N/A

PDR #	Category	Requirement	Section
		as large or larger than the project accounting area.	
PDR 118	<i>Ex-Ante</i> Estimation of NERs	The projected avoided baseline emissions, project emissions and leakage for each monitoring period and vintage year over the lifetime of the project.	3.2.4
PDR 119	<i>Ex-Ante</i> Estimation of NERs	A narrative description of sources used to estimate the leakage rate and demonstration that the estimated rate is conservative.	3.2.3 - Estimating Emissions from Activity-Shifting Leakage
PDR 120	<i>Ex-Ante</i> Estimation of NERs	If included in project activities, a description of procedures used to estimate the rate of biomass burning, charcoal production or logging and demonstration that these estimates are conservative.	3.2.2 - Calculating Emissions from Burning
PDR 121	Data and Parameters Available at Validation	The value for each variable in Appendix G.	3.3.1
PDR 122	Description of the Monitoring Plan	Summary of sampling procedures for the project accounting areas, with a copy of a sampling protocol used to carry out measurements.	3.3.3
PDR 123	Description of the Monitoring Plan	Summary of sampling procedures for the proxy areas, with a copy of a sampling protocol used to carry out measurements.	3.3.3
PDR 124	Description of the Monitoring Plan	Summary of sampling procedures for the activity-shifting leakage areas, with a copy of a sampling protocol used to carry out measurements.	3.3.3

Appendix 2: List of annexes

Annex #	Name
Annex 1	Theory of change
Annex 2	Local stakeholder consultation package
Annex 3	Land-cover procedure
Annex 4	Baseline definition
Annex 5	Grid analysis
Annex 6	Climate monitoring plan
Annex 7	Q/A & Q/C procedure for GIS products